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Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

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ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-1E, Block-B,
Type-03

Union: Rajapalong; Upazila: Ukhiya
District: Cox's Bazar

Funded by:



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Design and Supervision Consultancy:



Development Design Consultants Ltd.

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department
MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit

PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank



1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Service Centers are to offer the facilities which will improve the availability.

These Multipurpose Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which are identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multipurpose Community and Service Center (MPSC) will be constructed under Rajapalong union in Rohingya camp number 1E of Ukhiya Upazila under Cox's Bazar district. The catchment area of the subproject comprises the surrounding area of Rohingya camp 1E. Typical camp settlement settings of the area are no exception than other camp

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya Camp-1E, Block-B
District	Cox's Bazar
Upazila	Ukhiya
Union	Rajapalong
Owner of land	Government
Land Available (sqft.)	4100
Structural Design Option	Type-03 (Rectangular Steel Frame 2-storey building (80 feet x 41 feet 7 inches)
Catchment area	Camp-1E
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	There is 10 feet wide BFS road on the west of the location which connects with Cox's Bazar-Teknaf Highway
Land acquisition	Not required
Current land condition	The location is an empty space

[D&SC and Field survey, 2021]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-1E; Block-B		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3326.64
Number of Floors	2	3326.64X2
Number of Class room (sq. feet)	3	each@ 11'-7"X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.

1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-1E, Block-B of Ukhiya Upazila in Cox's Bazar District. The site location is relatively a high plain land and accessible through vehicles as of 10ft wide BFS road is present near the site which connects with Cox's Bazar-Teknaf highway road. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Ukhiya
Union	Rajapalong
GPS position	21°13' 02.1 " N and 92° 09' 05.4"E
Distance from Upazila HQ	6 km
Nearby major road	Cox's Bazar- Teknaf highway
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2021]

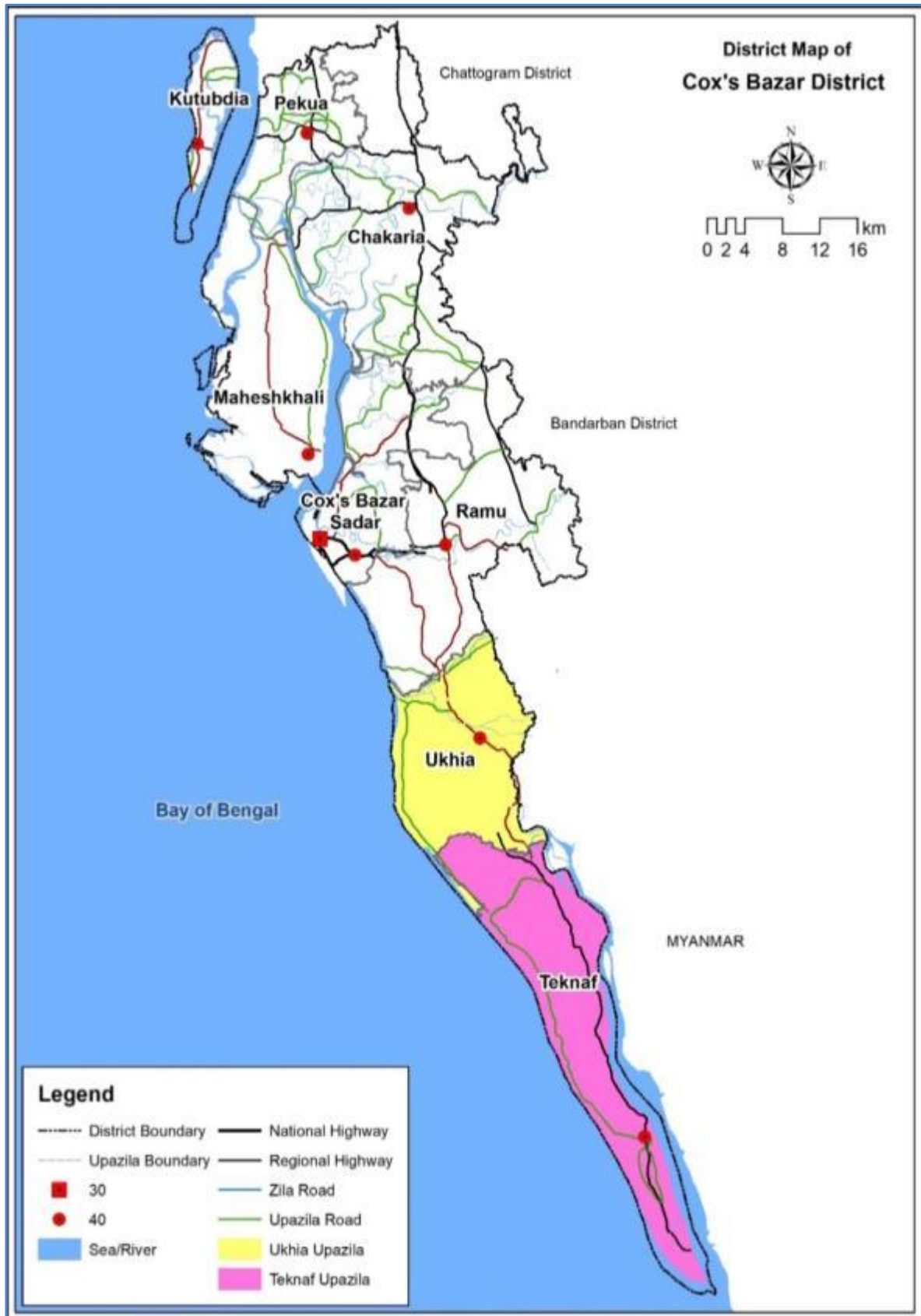


Figure 1.3.1: District Map with project location

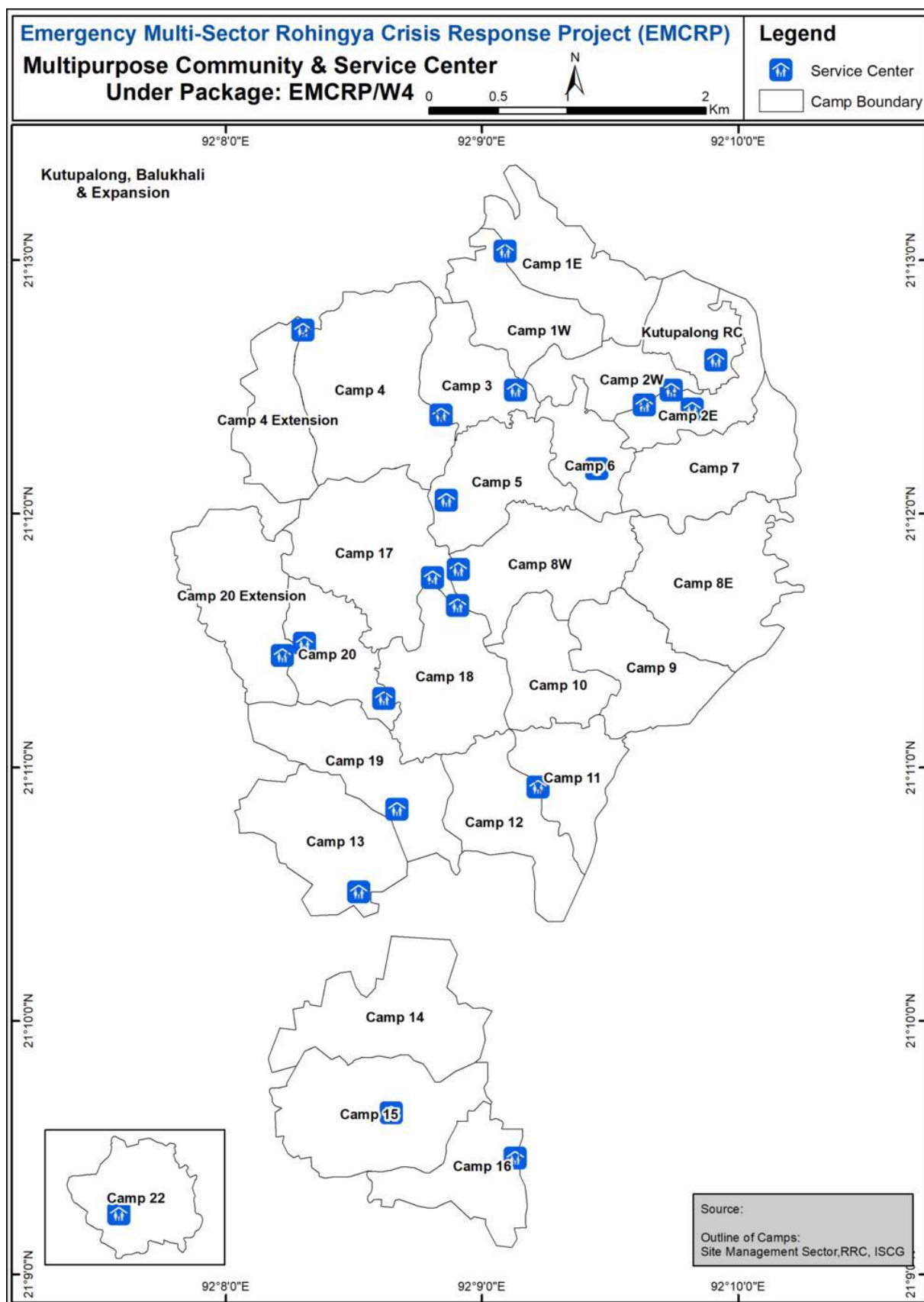


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)

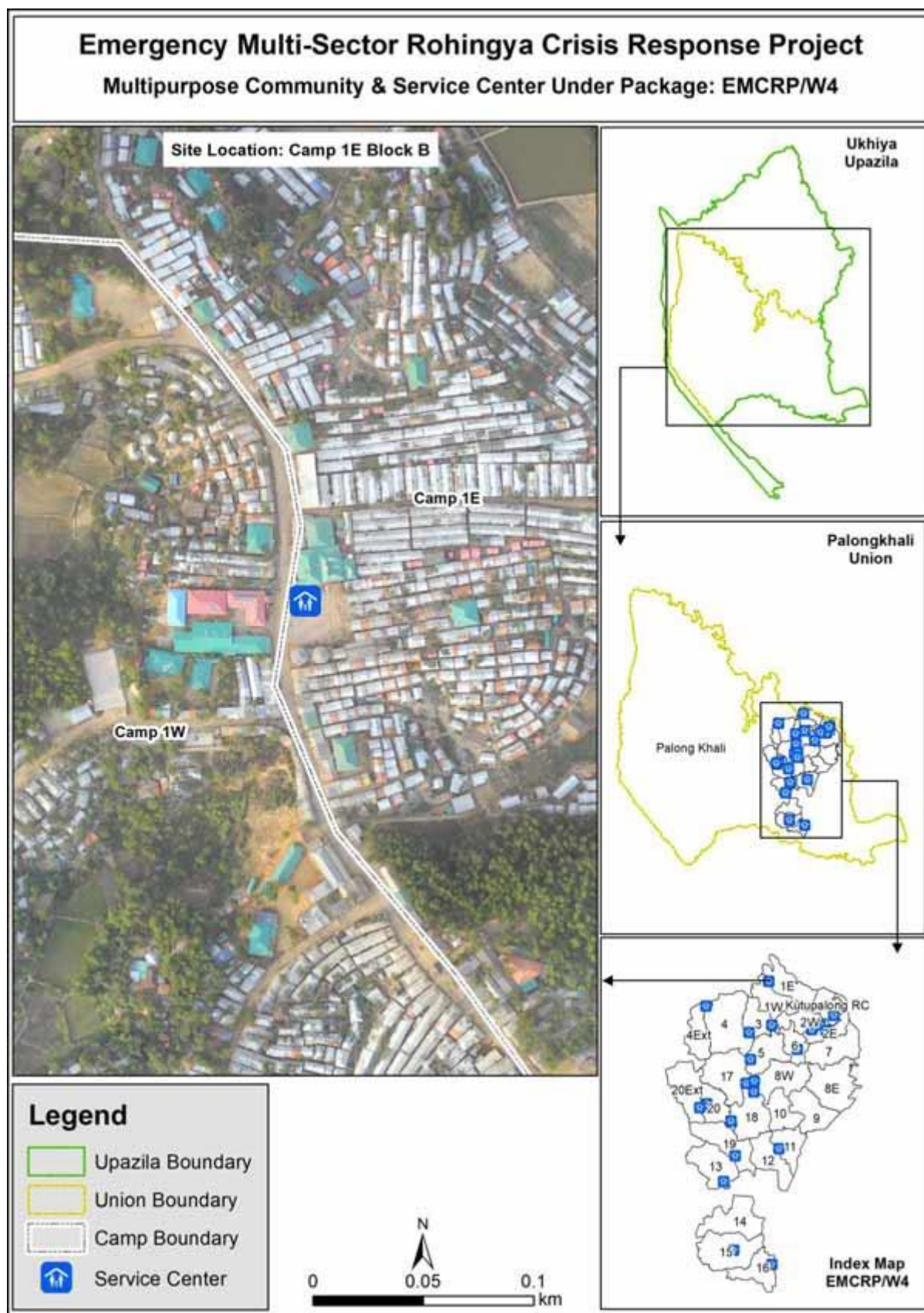


Figure 1.3.3: Union Map with Sub-project location in Camp area

1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	Fire Station(20m), Brac Medical Center(20m), Pond(200m), Shelter(30m)
South side	Brac Water filtration plant(30m)
East side	Shelter (10m), Pond (250m), Playground (250m)
West side	CiC office(30m), Pond(120m), pond(230m)

[Sources of data: D&SC Field survey, 2021]



Figure 1.4.1: Present condition of the Sub-project area



Figure 1.4.2: Proposed location of MPSC construction

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 15 February 2021 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 08 persons, and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location in particular has no major complications and is in relevance with the CiC office authority currently. Present Camp in Charge has suggested to start the development works as early as possible.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Rohingya Camp 1E; Block-B and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Consultation with CiC Authority



Consultation with DRP Community

Figure 2.1.1: Public Consultation Meeting in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people considered that the selected site is suitable for the construction of Multipurpose service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.
- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.
- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.

- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment. Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 15 February 2021 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected site allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. On the north Fire Station(20m), Brac Medical Center(20m), Pond(200m), Shelter(30m); On the south Brac Water filtration plant(30m); On the east Shelter (10m), Pond (250m), Playground (250m); on the west CiC office(30m), Pond(120m), pond(230m). Few disturbances to some of these establishments/features is anticipated due to construction activities for the case of not being in a sufficient distance from the construction site which is why safety measures such as, strict construction site management system- including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe

storage of materials et cetera should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from piling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from piling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routs and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the mitigation options, different initiatives have been undertaken, such as formation and capacity development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones, as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree plantation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones have been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tubewell in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose Community and Service Center will be constructed on a high land where some matured vegetation is found. Due to the construction activities of this Sub-project, 3-5 nos. of trees (small sized) will be cut down and as a mitigation measure, 10 nos. of trees will be replanted in

the target location. Further, some settlements around the sub-project location might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall effects for this proposed construction works are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.
- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.
- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures are being realized over time. A comprehensive monitoring framework is suggested in Project ESMF



and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguard's specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed

guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.
- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.

Appendix-1**Environmental Screening Form**

Sub-Project Description Form: (MPSC of Rohingya Camp-1E, Block-B)

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Ukhiya

Union: Rajapalong

Name of Community/Local Area: Rajapalong, Rohingya Camp-1E.

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose community and Service Center Steel Frame 2-storey building will be constructed within target location.

Estimated footprint / land area for this sub-project is 3326.64 sq. feet

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.): Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified location on Rohingya camp area. On the north Fire Station(20m), Brac Medical Center(20m), Pond(200m), Shelter(30m); On the south Brac Water filtration plant(30m); On the east Shelter (10m), Pond (250m), Playground (250m); on the west CiC office(30m), Pond(120m), pond(230m). Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to



the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to demolition of an old building and later construction of a new building on the same place. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic. Human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified. On the north Fire Station(20m), Brac Medical Center(20m), Pond(200m), Shelter(30m); On the south Brac Water filtration plant(30m); On the east Shelter (10m), Pond (250m), Playground (250m); on the west CiC office(30m), Pond(120m), pond(230m) are present on the surrounding target area.

Some degree of disturbance is anticipated due to construction activities to those components since they are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration route is present nearly 2 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 03. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

Sub-project Location:

The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district. The sub-project area is located at 21°13' 02.1" N and 92° 09' 05.4" E. The distance from the Upazila headquarter is about 6 km. Nearby major road is Cox's Bazar- Teknaf highway.

Land ownership



Land is owned by Government.

Expected construction period: 18 (Eighteen months)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

Project intervention area is found to be an open space, but influence area should consider nearly half a kilometer radius around the proposed site.

On the north Fire Station(20m), Brac Medical Center(20m), Pond(200m), Shelter(30m); On the south Brac Water filtration plant(30m); On the east Shelter (10m), Pond (250m), Playground (250m); on the west CiC office(30m), Pond(120m), pond(230m). However, there is no chance of disturbance during this construction activity.

But there is no scope to be affected by the construction activities. No structures, trees and livelihood will be affected by this construction activity. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby.

Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

Section B: Environmental Screening

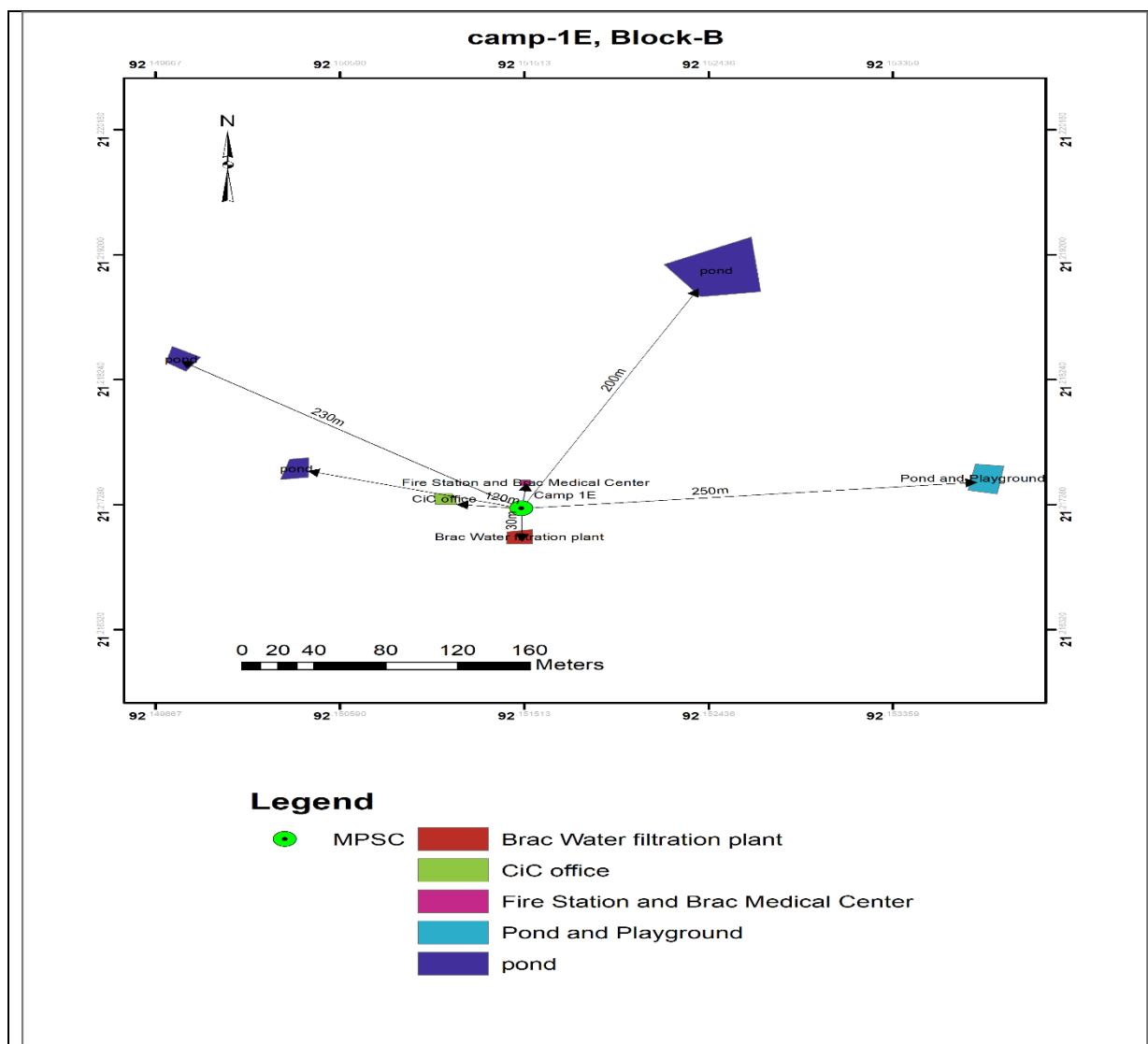
B.1: Environmental feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

On the north Fire Station(20m), Brac Medical Center(20m), Pond(200m), Shelter(30m); On the south Brac Water filtration plant(30m); On the east Shelter (10m), Pond (250m), Playground (250m); on the west CiC office(30m), Pond(120m), pond(230m).

There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.



Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. Several mosques, madrasa, high school and human settlement were found during the survey. Those will not be affected by the construction works, as the activities will be carried out within the existing selected boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

(1) Within/near Elephant Migration Routes Yes/No*

There is no existence of Elephant corridor/ route now, which have been checked on the basis of elephant migration route map established by UNHCR/IUCN (latest updated maps as of 22 February 2018 and later June 05, 2018).

(2) potential impacts on remaining forests in/around camps Yes/No

N/A (This activity will be ensured in DRP community and within existing camp boundary)

(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:
Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation):

N/A (the sub-project will be constructed in a plain land and within an identified camp boundary)

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 800 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2019). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

State of forestation:

Patches of vegetation containing large and matured trees across the road side of the proposed



subproject area are located within 200m radial distance.

Summary of water balance analysis (For water supply scheme only):

N/A

B.2: Pre construction Phase

Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable):

A HBB road is passing on the west side of the sub-project. It is possible to carry the construction materials on this road to the construction site.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:

Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.

Possible location of labor camps:

Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.

Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes vii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and viii) clay are the most common type of building material used in construction.

Identification of access road for transportation (Yes/No):

A HBB road is passing on the west side of the sub-project. It is possible to carry the construction materials on this road to the construction site.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with CiC authority.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

**B.3: Construction Phase****Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):**

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 200 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period.

Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

Around 3326.64 sq. feet land is required for the sub-project establishment.

There is reasonable vegetation around the sub-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No pre-existing drainage channel is found. Though a marshy land is found outside of the construction area, but will not be affected because of having a fair distance from the construction site and the adoption of proper construction site management practices.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very minimal impact expected. So, overall potential effect is very low or absent for this specific sub project.

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase
Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

Low. The proposed multipurpose community and service center will be equipped with full facilities for conducting multipurpose services to targeted people, including separate toilets (sanitary) for male and female persons, water supply and filtration, storage and other facilities. Fecal sludge will be produced from toilets that may require transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be produced in a typical day and higher amount of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC authority should be made aware of this separation and disposal procedure.

**Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)**

There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

During the operation phase, this Multipurpose Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

Low. The proposed site is already disturbed due to the presence of the camp. No evidence of endangered species were found.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

The proposed site is located inside the camp area. A HBB road connects the sites with main road. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc. therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. - All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			affect surface and ground water. Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of students, children, animals, etc.)	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC. - Proper covering of dust producing materials with polythene sheet, - Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. - Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is Low	- Water spraying at the demolition site - Fencing / Installing barriers should be shield from dust and aggregates - Avoid usage of machines/equipment with extra noise; - Do not accumulate and burn waste at the site - Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders - It needs to Identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies - Make mandatory the use of safety gears (helmets, safety belts, masks, gloves and boot) by workers depending on nature of work. - Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage
	Setting up of labor camp (Generation of sewage waste; solid	Under the sub-project intervention, the	Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental	Contractor, environmental specialist of	Complaints from community;	Prior to the start of Constructi



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	overall score is low.	Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. - Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times.	D&SC	Regular inspection of waste management activity; Waste disposal record.	on works
	Accidents	Under the sub-project intervention, the overall score is	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of	Before and during construction phase



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
		low.	- Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc. should be available in the site during construction period.		materials transport vehicles.	
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score is low.	- Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage. - Involve the community in planning the work program so that any particularly noisy or otherwise invasive activities can be scheduled to avoid sensitive times. - Avoid using of construction equipment producing excessive noise at school time & at night. - Ear protection devices for the workers & site staffs should be available in site during construction period.	Contractor, environmental specialist of D&SC	Number of complaints from stakeholders, Use of silencers in noise producing equipment and sound barriers, Noise Level following decibel meter (dB)	Daily
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in	Under the sub-project intervention, the overall score is low.	- Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. - Use tarpaulins to cover soils, sand and other loose material when transported by trucks. - Unpaved surfaces used for haulage of	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.		materials within settlements shall be maintained dust-free. • Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). • Limiting speed of construction vehicles in work sites to maximum of 20 km/h. • Regular monitoring of air quality.		quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution control devices, Maintain records	
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	• Prohibit employees from cutting of trees for firewood. • If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. • Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	• Prevent excessive noise; • Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); • No fires permitted on site except if needed for the construction works;	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- Staff must be trained up for operating equipment, - Availability and access to first-aid equipment and medical supplies. - Ensure the presence and use of safety gear at site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets, Uniforms etc., - Ensure adequate supply of drinking water. - Sanitation facilities for male & female workers separately.		signage, and metal sheets placed at project location;	
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - All affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; - All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; - The contractor must arrange the cancellation of all temporary services;	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Odor& waste disposal	Under the issue the overall score is low.	Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and PMU	Complaints from communities	Site inspection daily / weekly basis.
	Vegetation	Under the issue the overall score is low.	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions;	Over the completion of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turfing, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required.* Mention some recommendation on E&S assessment ESMP

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.



Appendix-2

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Construction of 22 Multipurpose Community and Service Center Steel Frame Building (LGED/EMCRP-W4): MPSC of Rohingya Camp-1E, Block-B

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of	Selected site will be far away from any water bodies or	PIU & Contractor	Environmental Consultant of PIU,



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	natural drainage	natural flow path to avoid the flash flood or any kind or surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.		PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	- Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. - It will be ensured that proper training and guidance are provided on general and occupational health and safety to Contractors' personnel and labors forces, and records of	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		training sessions are to be kept on site. All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. - Adequate facilities ensuring sanitation for labor camps will	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		be put in place. - Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labour forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared time to time for all types of work activities on site. - Proper walkways will be prepared for students and teachers in existing school boundary. - Proper Signpost at any slippery areas will be ensured in construction site.	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. - Adequate quantities of drinking water will be available at all		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Maintenance of assets, properties and	Periodic maintenance of building structures, plumbing, water filtering and electric equipment has to be carried out.	The party CiC find fit	UNO, Upazila Chairman of Upazila



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	equipment	- Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.		Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.
- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.



- Kitchen space disassembling must be treated with same level of accuracy and caution.
- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.

For wastes generated from construction and demobilization debris:

- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.
- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.



- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site;
- Burning of any type of wastes in the construction site shall be prohibited completely.

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Appendix-3

Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 20,000	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles	LS	LS @ Tk 30,000	30,000
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	2 nos.	@10,000 each	20,000
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as	2 no.	LS @ Tk. 30,000	60,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.			
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. The Safeguard personnel will take duty for 11 sites, so one-eleventh of the personnel cost is counted here.	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months (1/11 one site). (Net payment excluding Tax & VAT)	57,272.73
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73



Cost of H&S Measures under COVID 19 Situations

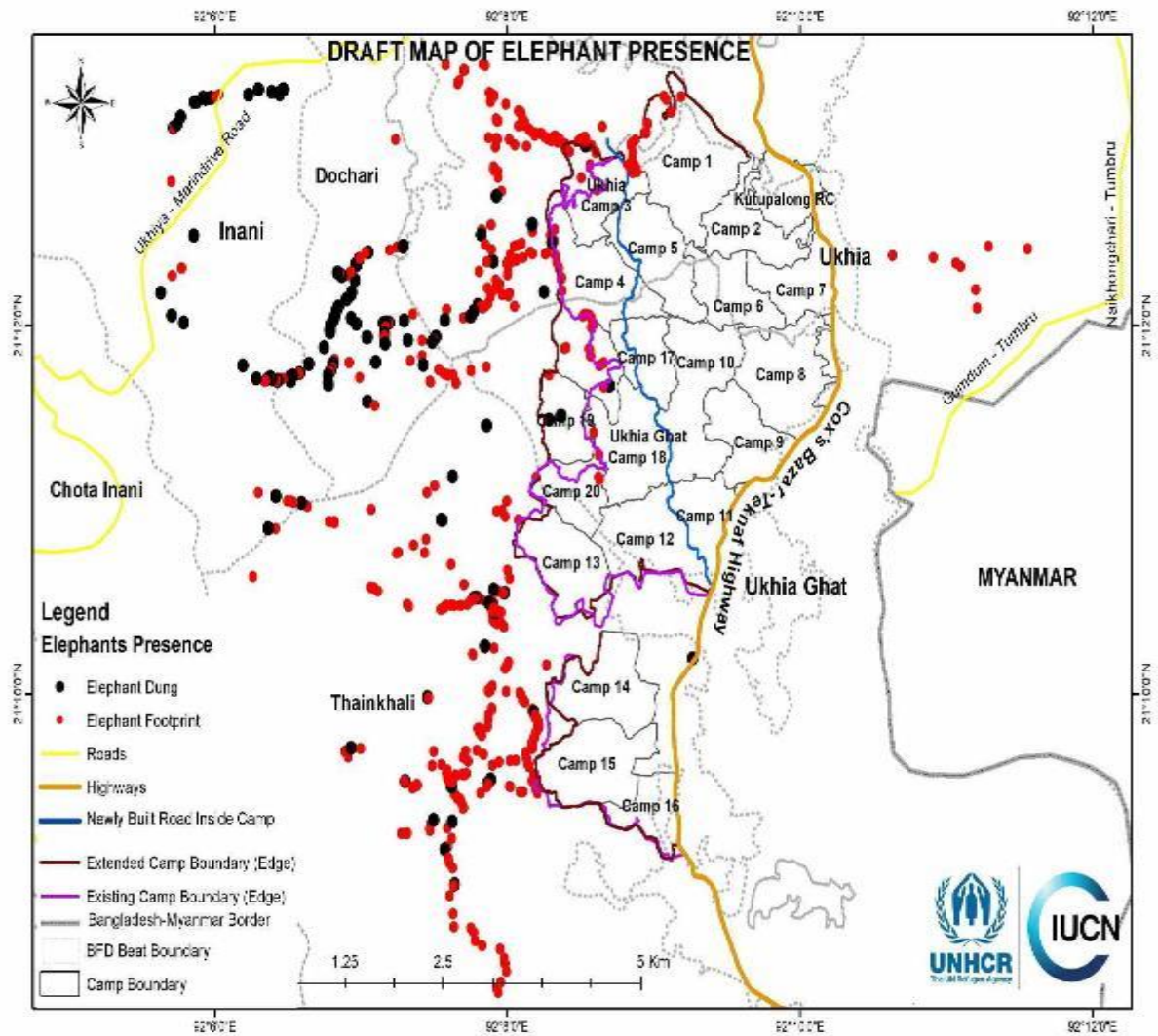
Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for	2 bottles and 1 Can for each	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office



Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
	Refill)	site						
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						165,125.00	

Appendix-4



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

[illegible]

Public consultation participant list



Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762

IDA Credit No. 5561-BD



ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-2E Pond,
Block-D, Type-3

Union: Palongkhali; Upazila: Ukhiya

District: Cox's Bazar

Funded by:



Government of the People's Republic of Bangladesh & World Bank

Design and Supervision Consultancy:



Development Design Consultants Ltd.

March 2021

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
DTW	Deep Tubewell
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling

LGED	Local Government Engineering Department
MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank



1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Community and Service Centers are to offer the facilities which will improve the availability.

These Multipurpose Community and Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which are identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multipurpose Community and Service Center (MPSC) will be constructed under Palongkhali Union in Rohingya camp number 2E (Pond), Block D of Ukhiya Upazila under Cox's Bazar district. The catchment area of the subproject comprises the surrounding area of Rohingya camp 2E. Typical camp settlement settings of the area are no exception than other

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

camp locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya Camp-2E(Pond), Block-D
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
Owner of land	Government
Land Available (sq.ft.)	4,250
Structural Design Option	Type-3 (Rectangular Steel Frame 2-story building (80 feet x 41 feet 7 inches)
Catchment area	Camp-2E
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	There is no direct route to connect the facility since it is inside camp location.
Land acquisition	Not required
Current land condition	The location is on an identified open space (near a pond)

[D&SC and Field survey, 2020]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-2E(Pond); Block-D		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3336
Number of Floors	2	3336X2
Number of Class room (sq. feet)	3	each@ 11'-7" X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.



1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-2E (Pond), Block-D of Ukhiya Upazila in Cox's Bazar District. The site location is relatively a high plain land and a drain is surrounded on east side as well as a narrow road is present near the site which does not connect with any main road. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Community and Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
GPS position	21.208099 N and 92.162301 E
Distance from Upazila HQ	5 km
Nearby major road	Cox's Bazar- Teknaf highway
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2020]

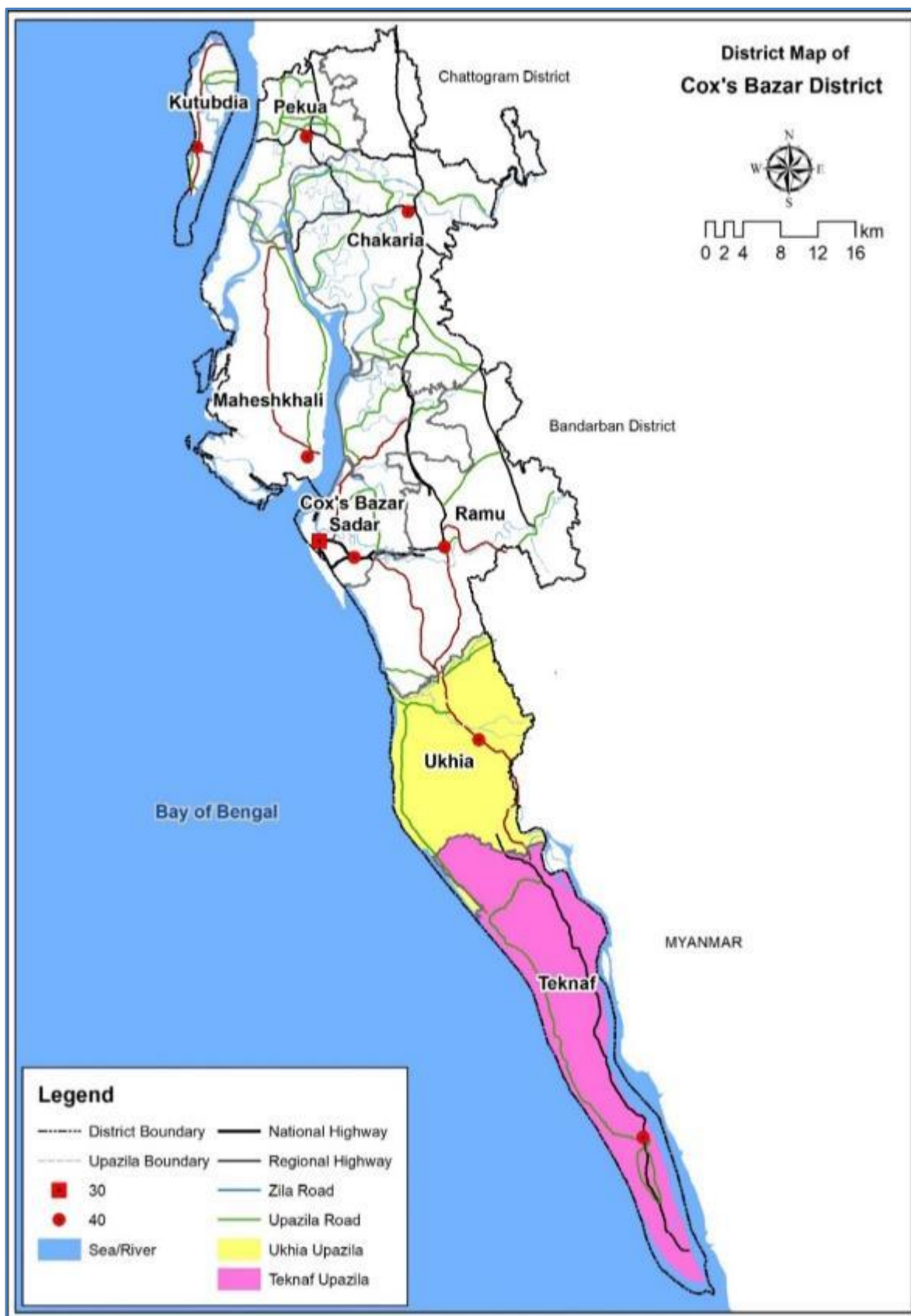


Figure 1.3.1: District Map with project location

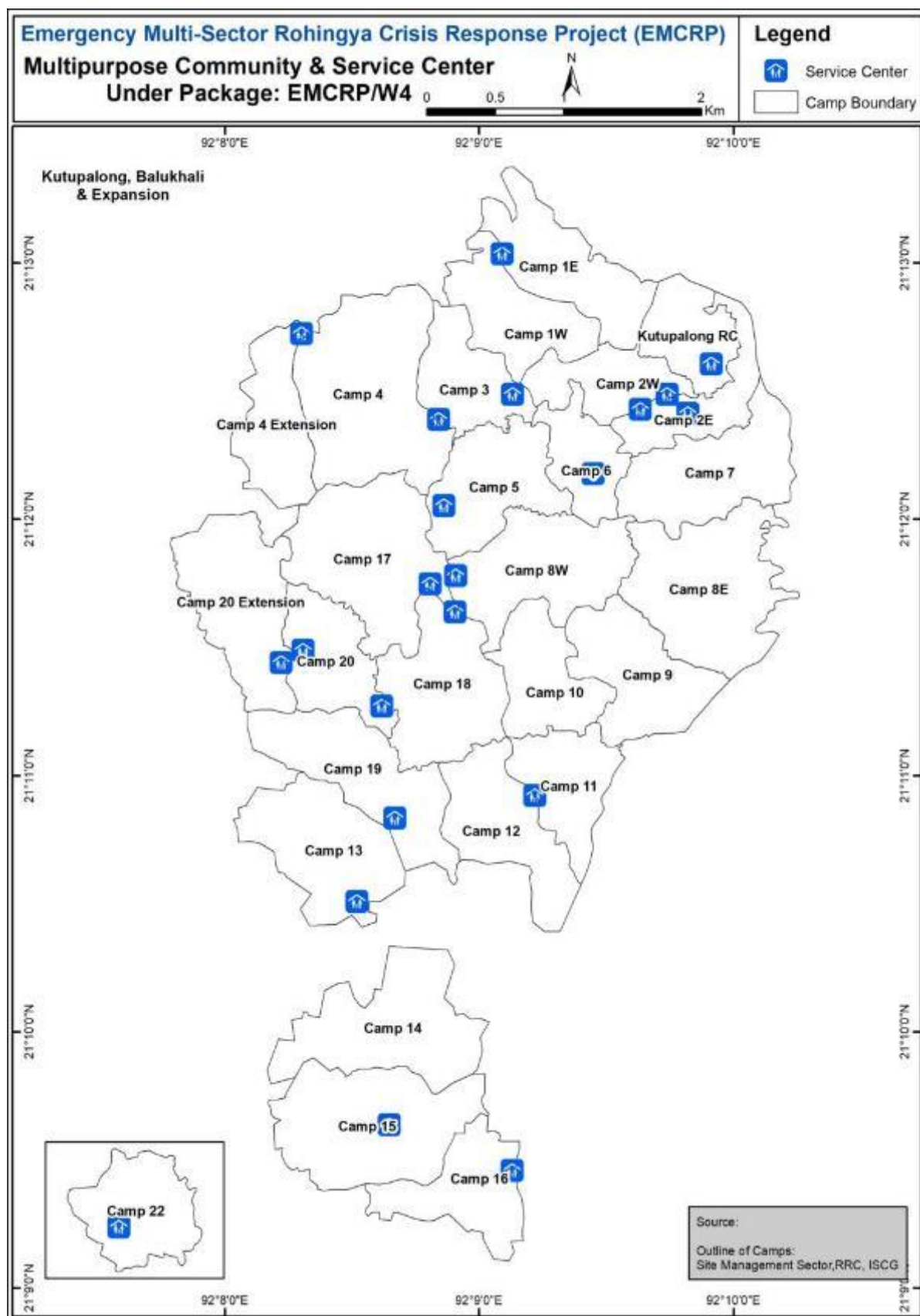


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)

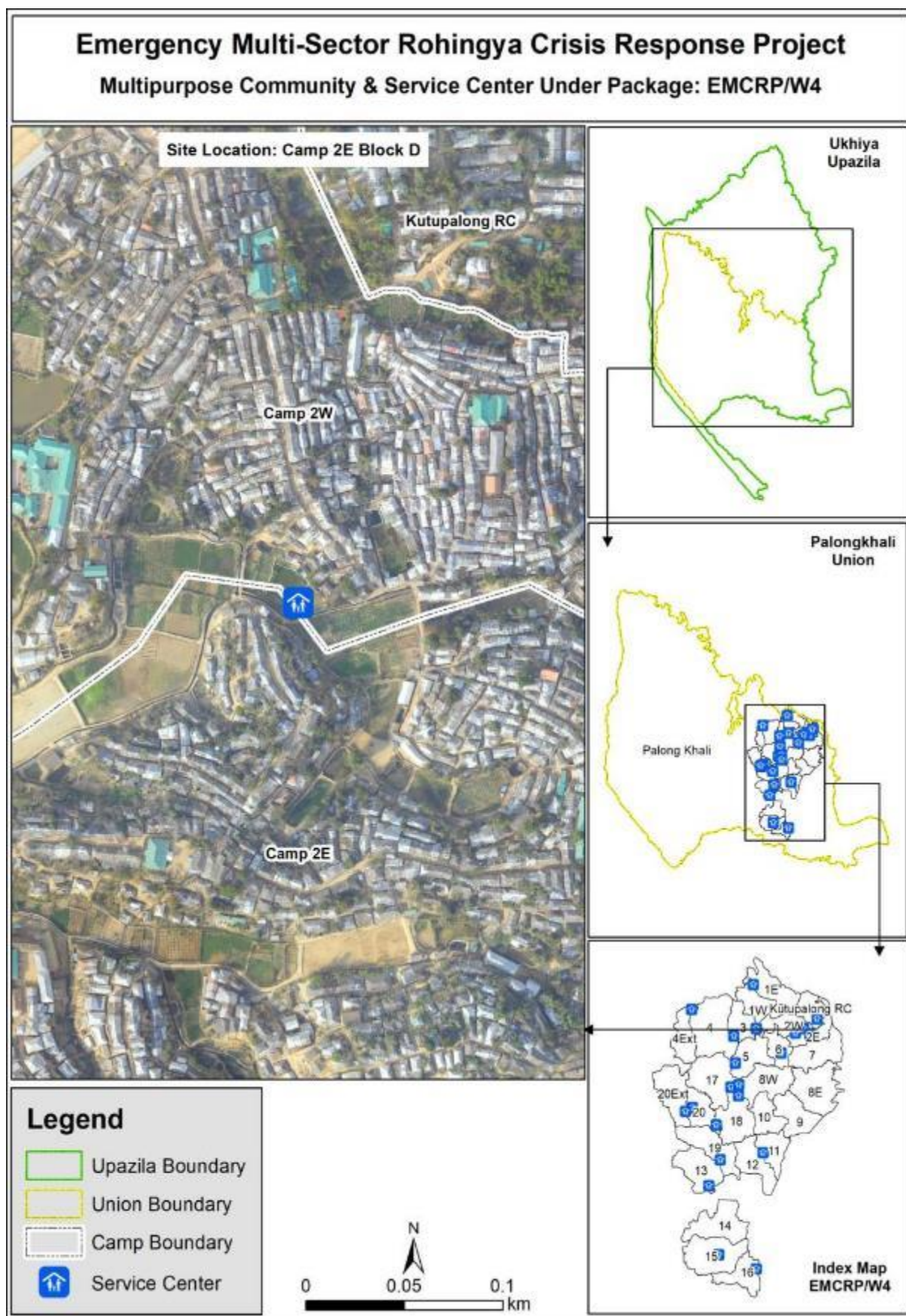


Figure 1.3.3: Union Map with Sub-project location in Camp area

1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	Toilet cum DTW (8m), DRP settlements (15m)
South side	Vegetation (15m), DRP settlements on uplands (50m)
East side	DRP settlements on uplands (40m)
West side	DRP settlements on (100m)

[Sources of data: D&SC Field survey, 2020]



Figure 1.4.1: Present condition of the Sub-project area



Figure 1.4.2: Proposed location of MPSC construction

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 18 March 2020 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 09 persons, and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location in particular has no major complications and is in relevance with the CiC office authority currently. Present Camp in Charge (CiC) has suggested to start the development works as early as possible.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Rohingya Camp 2E (Pond); Block-D and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Consultation with CiC Office Authority



Consultation with DRP

Figure 2.1.1: Public Consultation Meeting in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people considered that the selected site is suitable for the construction of Multipurpose service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.
- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.
- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.
- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine

which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 18 March 2020 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected sited allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. On the north side of the sub project Toilet cum DTW at 8m, Rohingya community households at 15m; on the south side of the sub-project area Vegetation at 15m, DRP settlements on uplands at 50m; on the east side DRP settlements on uplands at 40m and on the west side households of DRP community at 100m. Few disturbance to some of these establishments/features is anticipated due to construction activities for the case of not being in a sufficient distance from the construction site which is why safety measures such as, strict construction site management system-including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials et cetera should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from piling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from piling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routs and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the

mitigation options, different initiatives have been undertaken, such as formation and capacity development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones, as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree planation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones have been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tubewell in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose Community and Service Center will be constructed on a high land where some matured vegetation is found. Due to the construction activities of this Sub-project, 2-3 nos. of trees (small and medium size) will be cut down and as a mitigation measure, 10 nos. of trees will be replanted in the target location. Further, some settlements on the sub-project area might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall

effects for this proposed construction works are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.

- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.
- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures are being realized over time. A comprehensive monitoring framework is suggested in Project ESMF and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the

environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguards specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the

backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.
- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.

Appendix-1**Environmental Screening Form**

Sub-Project Description Form: (MPSC of Rohingya Camp-2E(Pond), Block-D)

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Ukhiya

Union: Palongkhali

Name of Community/Local Area: Palongkhali, Rohingya Camp-2E

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose community and Service Center Steel Frame 2-story building will be constructed within target location.

Estimated footprint / land area for this sub-project is 4,250 sq. feet

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.): Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified location on Rohingya camp 2E(Pond), Block D area. On the north side of the sub project Toilet cum DTW at 8m, Rohingya community households at 15m; on the south side of the sub-project area Vegetation at 15m, DRP settlements on uplands at 50m; on the east side DRP settlements on uplands at 40m and on the west side households of DRP community at 100m. Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any

adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to demolition of an old building and later construction of a new building on the same place. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic. Human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified. On the north side of the sub project Toilet cum DTW at 8m, Rohingya community households at 15m; on the south side of the sub-project area Vegetation at 15m, DRP settlements on uplands at 50m; on the east side DRP settlements on uplands at 40m and on the west side households of DRP community at 100m are present on the surrounding target area.

Some degree of disturbance is anticipated due to construction activities to those components since they are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration route were nearly 4 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 03. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

Sub-project Location:

The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district. The sub-project area is located at 21.208099 N and 92.162301 E. The distance from the Upazila



headquarter is about 5 km. Nearby major road is Cox's Bazar- Teknaf highway.

Land ownership

Land is owned by Government.

Expected construction period: 18 (Eighteen months)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

Project intervention area is found to be an open space, but influence area should consider nearly half a kilometer radius around the proposed site. On the north side of the sub project Toilet cum DTW at 8m, Rohingya community households at 15m; on the south side of the sub-project area Vegetation at 15m, DRP settlements on uplands at 50m; on the east side DRP settlements on uplands at 40m and on the west side households of DRP community at 100m but there is no chance to disturbance during this construction activity.

But there is no scope to be affected by the construction activities. No structures, trees and livelihood will be affected by this construction activity. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby.

Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

Section B: Environmental Screening

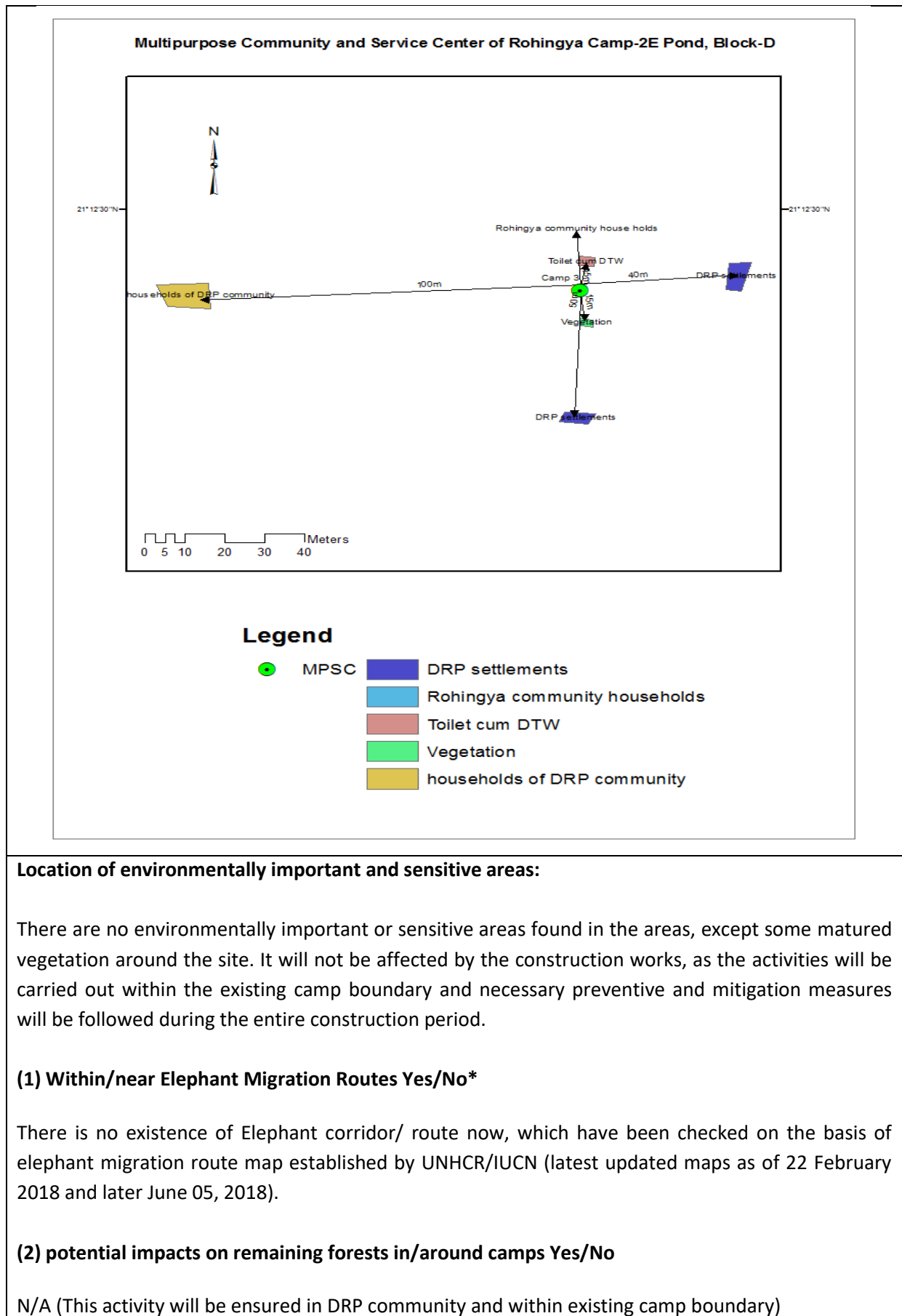
B.1: Environmental feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

On the north side of the sub project Toilet cum DTW at 8m, Rohingya community households at 15m; on the south side of the sub-project area Vegetation at 15m, DRP settlements on uplands at 50m; on the east side DRP settlements on uplands at 40m and on the west side households of DRP community at 100m.

There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.



(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:
Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation):

N/A (the sub-project will be constructed in a plain land and within an identified camp boundary)

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 800 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2020). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

**State of forestation:**

Patches of vegetation containing large and matured trees on all edges of the proposed subproject area are located within 200m radial distance.

Summary of water balance analysis (For water supply scheme only):

N/A

B.2: Pre construction Phase**Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable):**

A HBB road is passing on the west side of the sub-project. It is possible to carry the construction materials on this road to the construction site.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:

Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.

Possible location of labor camps:

Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.

Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes viii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and ix) clay are the most common type of building material used in construction.

Identification of access road for transportation (Yes/No):

A HBB road is passing on the west side of the sub-project. It is possible to carry the construction materials on this road to the construction site.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with CiC authority.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly

composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 200 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period.

Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

Around 3336 sq. feet land is required for the sub-project establishment.

There is reasonable vegetation around the sub-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No pre-existing drainage channel is found. Though a marshy land is found outside of the construction area, but will not be affected because of having a fair distance from the construction site and the adoption of proper construction site management practices.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

Low. The proposed multipurpose community and service center will be equipped with full facilities for conducting multipurpose services to targeted people, including separate toilets (sanitary) for male and female persons, water supply and filtration, storage and other facilities. No fecal sludge will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be

produced in a typical day and higher amount of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC authority should be made aware of this separation and disposal procedure.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

During the operation phase, this Multipurpose Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There is no protected area in or around the project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

The proposed site is located inside the camp area. A HBB road connects the sites with main road. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc. therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because



of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere.	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. - Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	students, children, animals, etc.)		• Proper covering of dust producing materials with polythene sheet. • Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. • Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is low	• Water spraying at the demolition site • Fencing / Installing barriers should be shield from dust and aggregates • Avoid usage of machines/equipment with extra noise; • Do not accumulate and burn waste at the site • Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders • It needs to Identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- Make mandatory the use of safety gears (helmets, safety belts, masks, gloves and boot) by workers depending on nature of work. - Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.			
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	Under the sub-project intervention, the overall score is low.	- Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. - Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity; Waste disposal record.	Prior to the start of Construction works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times.			
	Accidents	Under the sub-project intervention, the overall score is low.	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. - Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc. should be available in the site during construction period.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score	Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage.	Contractor, environmental specialist of	Number of complaints from stakeholders,	Daily



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
		is low.	- Involve the community in planning the work program so that any particularly noisy or otherwise invasive activities can be scheduled to avoid sensitive times. - Avoid using of construction equipment producing excessive noise at school time & at night. - Ear protection devices for the workers & site staffs should be available in site during construction period.	D&SC	Use of silencers in noise producing equipment and sound barriers, Noise Level following decibel meter (dB)	
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and	Under the sub-project intervention, the overall score is low.	- Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. - Use tarpaulins to cover soils, sand and other loose material when transported by trucks. - Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free. - Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). - Limiting speed of construction vehicles in	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution control devices,	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	reversible by mitigation measures.		work sites to maximum of 20 km/h. Regular monitoring of air quality.		Maintain records	
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	- Prohibit employees from cutting of trees for firewood. - If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. - Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	- Prevent excessive noise; - Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); - No fires permitted on site except if needed for the construction works; - Staff must be trained up for operating equipment, - Availability and access to first-aid equipment and medical supplies. - Ensure the presence and use of safety gear at site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets,	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at project location;	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Uniforms etc., - Ensure adequate supply of drinking water. - Sanitation facilities for male & female workers separately.			
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - All affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; - All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; - The contractor must arrange the cancellation of all temporary services.	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works
	Odor& waste disposal	Under the issue the overall score is low.	Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and PMU	Complaints from communities	Site inspection daily / weekly basis.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Vegetation	Under the issue the overall score is low.	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions;	Over the completion of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turfing, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required. Mention some recommendation on E&S assessment ESMP*

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.



Appendix-2

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Construction of 22 Multipurpose Service Center Steel Frame Building (LGED/EMCRP-W4): MPSC of Rohingya Camp-2E(Pond), Block-D

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of	Selected site will be far away from any water bodies or	PIU & Contractor	Environmental Consultant of PIU,



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	natural drainage	natural flow path to avoid the flash flood or any kind or surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.		PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	- Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. - It will be ensured that proper training and guidance are provided on general and occupational health and safety to Contractors' personnel and labors forces, and records of	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		training sessions are to be kept on site. All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. - Adequate facilities ensuring sanitation for labor camps will	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		be put in place. - Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labour forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared time to time for all types of work activities on site. - Proper walkways will be prepared for students and teachers in existing school boundary. - Proper Signpost at any slippery areas will be ensured in construction site.	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. - Adequate quantities of drinking water will be available at all		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Maintenance of assets, properties and	Periodic maintenance of building structures, plumbing, water filtering and electric equipment has to be carried out.	The party CiC find fit	UNO, Upazila Chairman of Upazila



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	equipment	- Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.		Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization works:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.



- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.
- Kitchen space disassembling must be treated with same level of accuracy and caution.
- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.



For wastes generated from construction and demobilization debris:

- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.
- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.
- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site.
- Burning of any type of wastes in the construction site shall be prohibited completely.

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Appendix-3

Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 20,000	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles	LS	LS @ Tk 30,000	30,000
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	2 nos.	@10,000 each	20,000
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as	2 no.	LS @ Tk. 30,000	60,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.			
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. The Safeguard personnel will take duty for 11 sites, so one-eleventh of the personnel cost is counted here.	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months (1/11 one site). (Net payment excluding Tax & VAT)	57,272.73
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73

**Cost of H&S Measures under COVID 19 Situations**

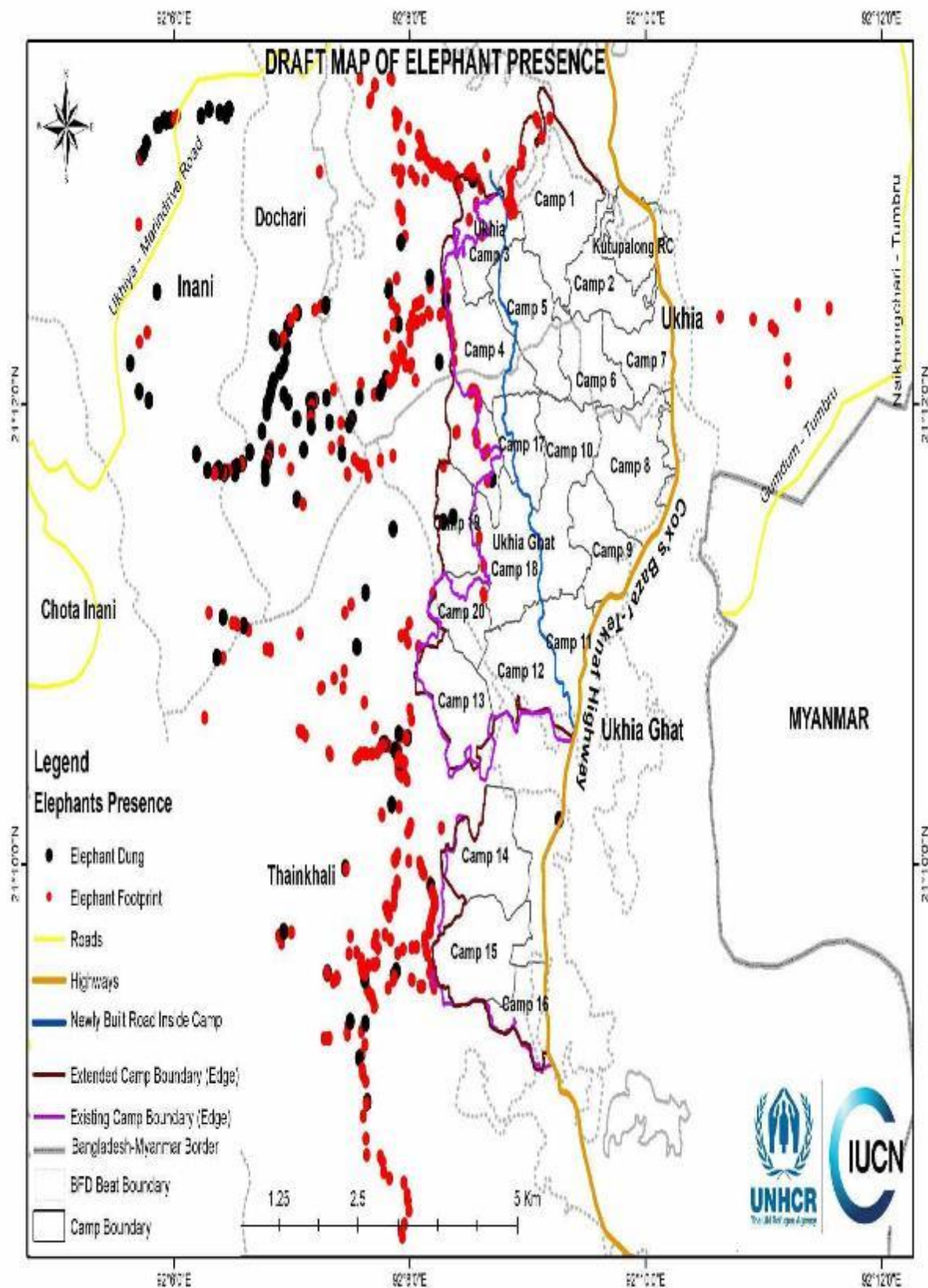
Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for	2 bottles and 1 Can for each	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office



Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
	Refill)	site						
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						165,125.00	

Appendix-4



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)
জরুরী ভিত্তিতে রোহিঙ্গা সংকট মোকাবেলায় মানসিক সেবায় প্রকল্প
Local Government Engineering Department (LGED)
Public Consultation Participants List
Focus Group Discussion

সময় : ১:৩০ তারিখ : ২৮/০৩/২০২০

উপ-প্রকল্প/কমপোনেন্ট এর নাম : MPSC-Campo-2E (Pong)

মত বিনিময় স্থান : CIE office তে অনুষ্ঠান

ইউনিয়ন : নান্দা-খালি ওয়ার্ড নং : ডাকঘর : খলুয়াখালি উপজেলা : চৌধুরী জেলা : কক্সবাজার

সাব প্রকল্প নং : EMCRP/W-4

অংশগ্রহণকারীদের হাজিরা (পরিচয় ও স্বাক্ষর)

ক্রম নং	নাম	বয়স	পুরুষ/নারী	গ্রাম	স্বাক্ষর / চিহ্নসহ
০১	আব্দুল্লাহ	৩৫	পুরুষ	camp 2E	আব্দুল্লাহ
০২	আবদুল	২০	"	"	আবদুল
০৬	শ্রী: ইমরুল	৩৬	"	"	ইমরুল
০৪	শ্রী: হুমায়ুন	২৭	"	"	হুমায়ুন
০৫	আবদুল হামিদ	৩০	"	"	আবদুল হামিদ
০৬	শ্রী: ইমরুল	৩৬	"	"	শ্রী: ইমরুল
০৭	আবদুল হামিদ	২২	"	"	আবদুল হামিদ
০৮	আবদুল হামিদ	৩০	"	"	আবদুল হামিদ
০৯	আবদুল হামিদ	৩২	"	"	আবদুল হামিদ

Public consultation participant list



Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762

IDA Credit No. 5561-BD



ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-4Ext., Block-CiC office, Type-2

Union: Palongkhali; Upazila: Ukhiya

District: Cox's Bazar

Funded by:



Government of the People's Republic of Bangladesh & World Bank

Design and Supervision Consultancy:



Development Design Consultants Ltd.

March 2021

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department

MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank

1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Community and Service Centers are to offer the facilities which will improve the availability.

These Multipurpose Community and Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which are identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multipurpose Community and Service Center (MPSC) will be constructed under Palongkhali union in Rohingya camp number 4Ext., Block CiC office of Ukhiya Upazila under Cox's Bazar district. The catchment area of the subproject comprises the surrounding area of Rohingya camp 4Ext. Typical camp settlement settings of the area are no exception than other camp locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya Camp-4 Ext., Block- CiC office
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
Owner of land	Government
Land Available (sq.ft.)	6000
Structural Design Option	Type-2 (Rectangular Steel Frame 2-storey building (90 feet x 41 feet 7 inches)
Catchment area	Camp-4Ext.
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	There is no direct route to connect the facility since it is inside camp location.
Land acquisition	Not required
Current land condition	The location is on identified open space

[D&SC and Field survey, 2020]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-4Ext.; Block-CiC office		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3753
Number of Floors	2	3753X2
Number of Class room (sq. feet)	3	each@ 14'-11" X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.

1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-4Ext., Block-CiC office of Ukhiya Upazila in Cox's Bazar District. The site location is relatively a high plain land and adjacent to CiC office of Rohingya camp 4Ext. to the south. This targeted location is right alongside of existing HBB road which is the main communication route. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Community and Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
GPS position	21.212049, 92.138342E
Distance from Upazila HQ	7 km
Nearby major road	20ft. HBB camp connecting road
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2020]

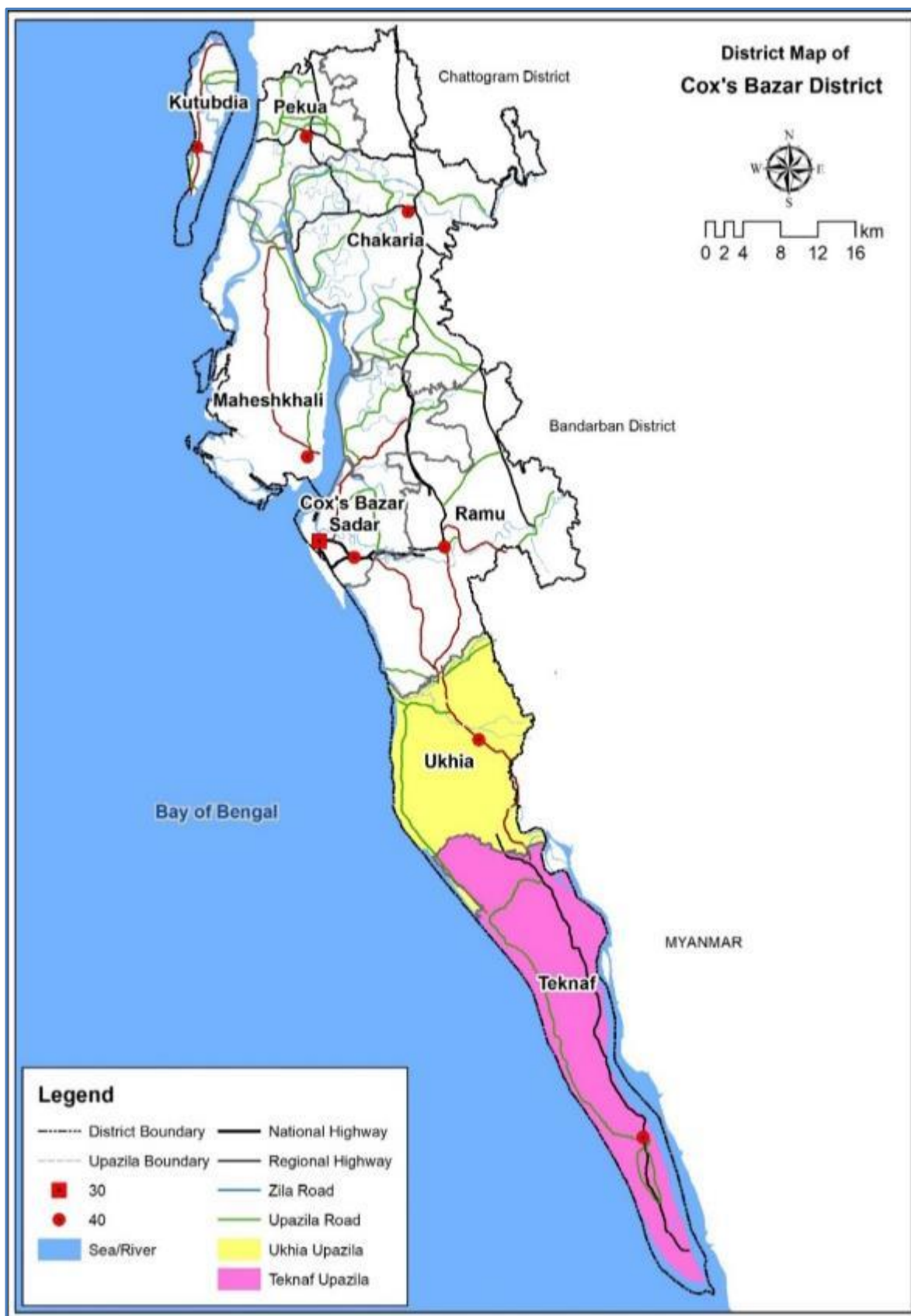


Figure 1.3.1: District Map with project location

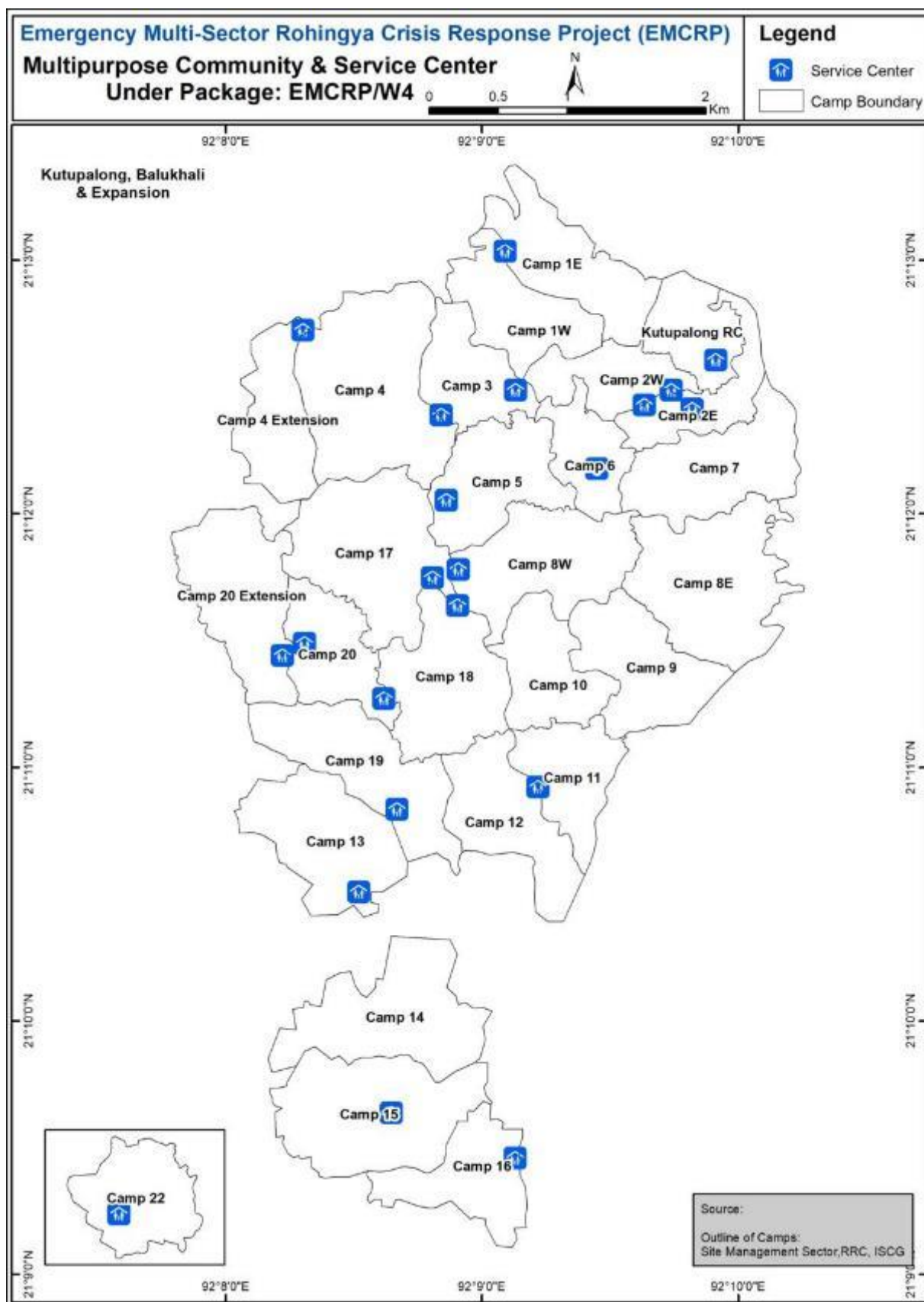


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)

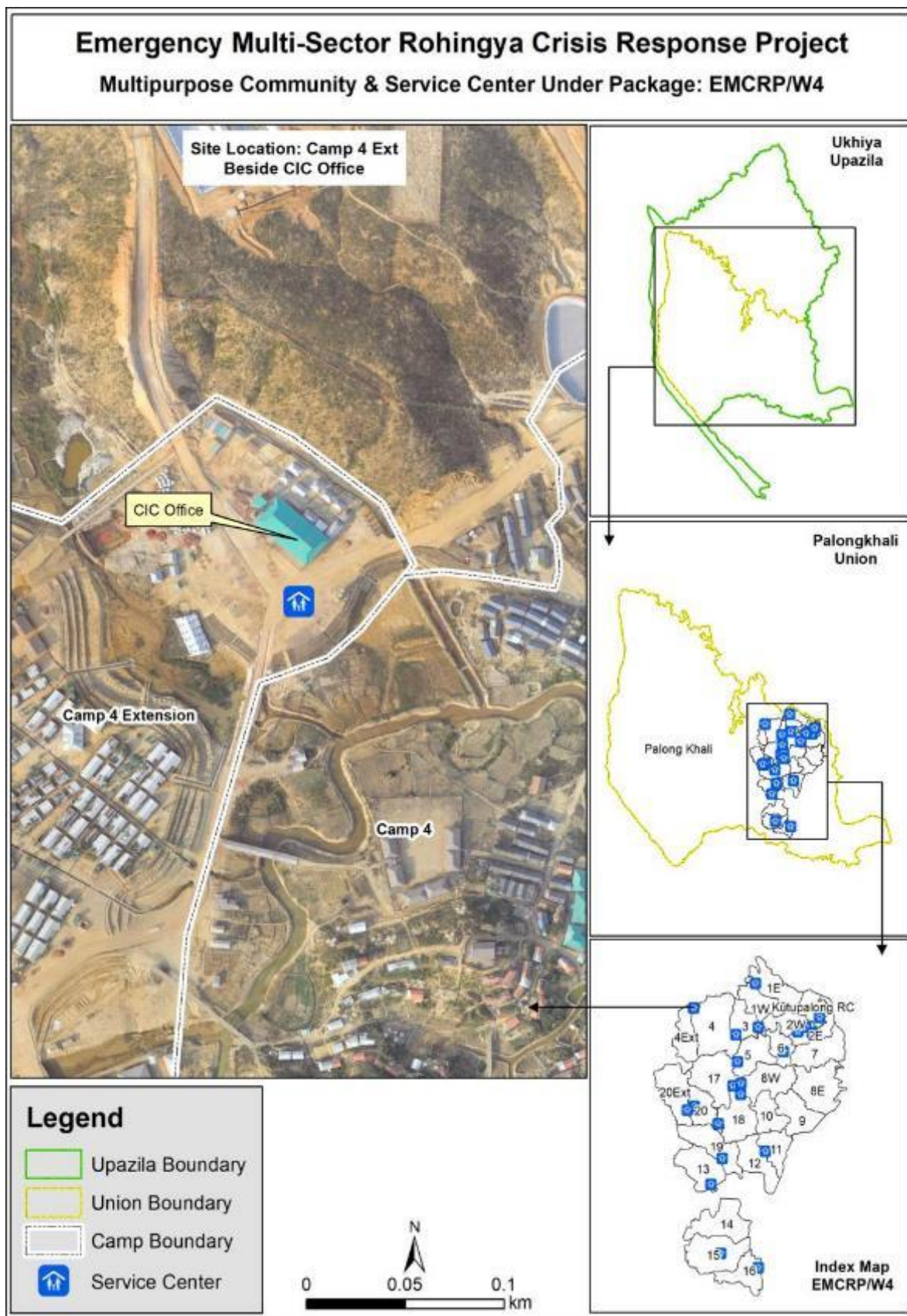


Figure 1.3.3: Union Map with Sub-project location in Camp area

1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	DRP settlements (100m)
South side	Wash block (20m), DRP settlements (300m)
East side	HBB road (5m), CiC office (10m), DRP settlements (130m)
West side	DRP settlements (200m)

[Sources of data: D&SC Field survey, 2020]



Figure 1.4.1: Present condition of the Sub-project area



Figure 1.4.2: Proposed location of MPSC construction

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 19 March 2020 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 10 persons, and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location in particular has no major complications and is in relevance with the CiC office authority currently. Present Camp in Charge (CiC) has suggested to start the development works as early as possible.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Rohingya Camp 4Ext.; Block-CiC office and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Consultation with CiC Office Authority



Consultation with DRP

Figure 2.1.1: Public Consultation Meeting in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people considered that the selected site is suitable for the construction of Multipurpose service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.
- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.
- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.
- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine

which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 19 March 2020 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected sited allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. On the north of the sub project DRP settlements at 100m; On the west side of the sub-project area DRP settlements at 200m; On the East side HBB road (5m), CiC office (10m), DRP settlements at 130m and on the south side Wash block at 20m and households of DRP community at 300m. Few disturbance to some of these establishments/features is anticipated due to construction activities for the case of not being in a sufficient distance from the construction site which is why safety measures such as, strict construction site management system- including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials et cetera should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from piling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from piling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routs and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the mitigation options, different initiatives have been undertaken, such as formation and capacity

development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones, as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree planation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones have been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tubewell in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose Community and Service Center will be constructed on a high land where some matured vegetation is found. Due to the construction activities of this Sub-project, trees (small and medium size) will not be cut down as well as 10 nos. of trees will be planted in the target location. Further, some settlements of sub-project area might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall effects for this proposed

construction works are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.

- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.
- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures are being realized over time. A comprehensive monitoring framework is suggested in Project ESMF and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the

environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguards specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the

backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.
- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.

Appendix-1**Environmental Screening Form**

Sub-Project Description Form: (MPSC of Rohingya Camp-4Ext., Block-CiC office)

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Ukhiya

Union: Palongkhali

Name of Community/Local Area: Palongkhali, Rohingya Camp-4Ext.

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose Community and Service Center Steel Frame two story building will be constructed within target location.

Estimated footprint / land area for this sub-project is 6,000 sq. feet

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.): Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified open space of Rohingya Camp-4Ext., Block-CiC office. This location is adjacent to respective CiC office to the south and no prevalent with any critical features. Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the



ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to construction of a new building on the identified place. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic. Human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified. On the north of the sub project DRP settlements at 100m; on the south side of the sub-project area Wash block (20m), DRP settlements (300m); on the East side HBB road (5m), CiC office (10m), DRP settlements (130m) and on the west side settlements of DRP community at 200m are present on the surrounding target area. Some degree of disturbance is anticipated due to construction activities to those components since they are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration route were nearly 2 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 02. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

Sub-project Location:

The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district. The sub-project area is located at 21.212049 N and 92.138342 E. The distance from the Upazila headquarter is about 7 km. Nearby major road is 20ft. Rohingya camp connecting road.

Land ownership

Land is owned by Government.



Expected construction period: 18 (Eighteen months)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

Project intervention area is to be an open space, but influence area should consider nearly half a kilometer radius around the proposed site. CiC office is located on the south side.

On north side DRP settlements (100m); on south side Wash block (20m), DRP settlements (300m); on east side HBB road (5m), CiC office (10m), DRP settlements (130m) and on west side DRP settlements (200m). But there is no scope to be affected by the construction activities. No structures, trees and livelihood will be affected by this construction activity. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby.

Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

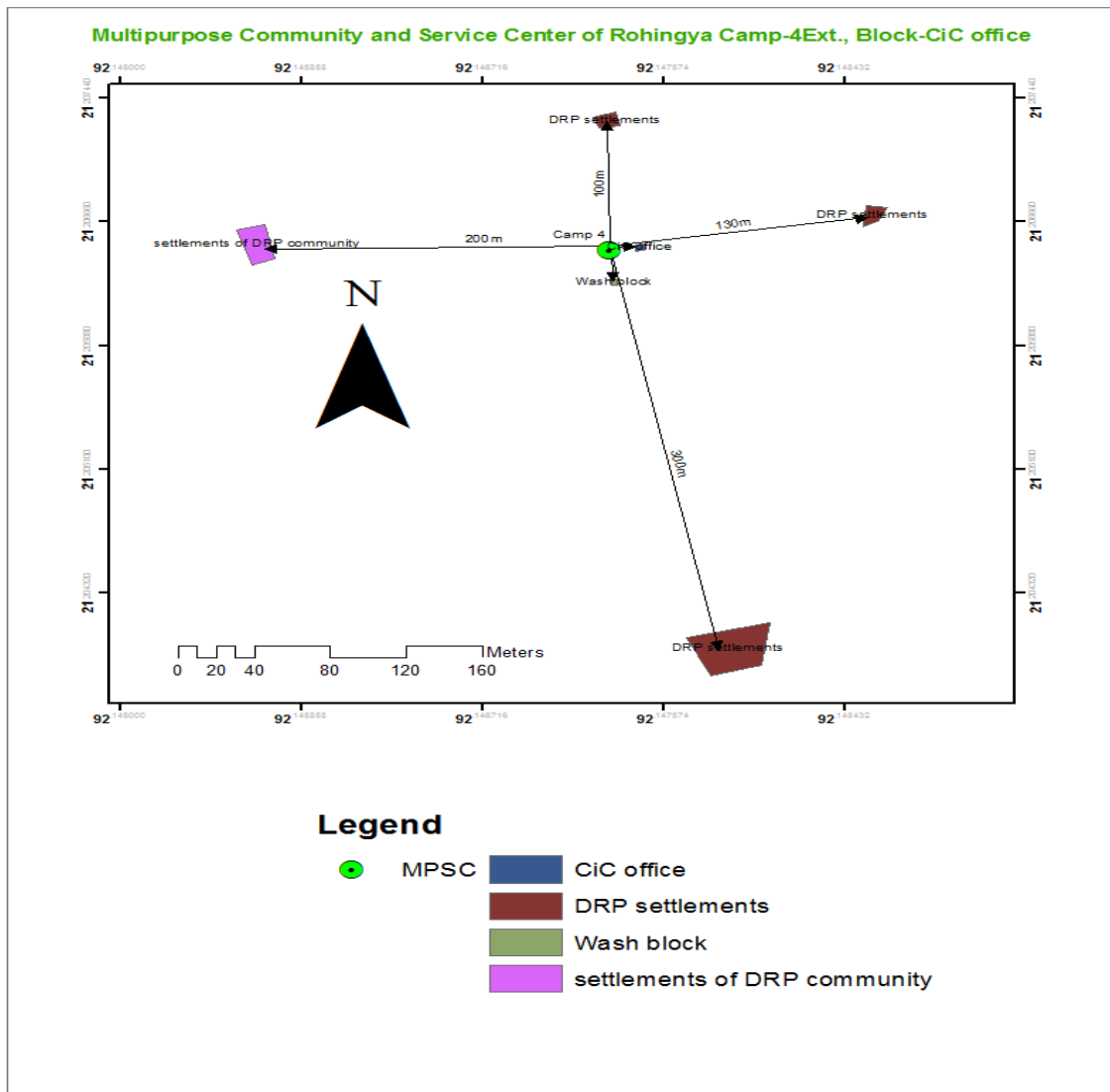
Section B: Environmental Screening

B.1: Environmental feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

On north side DRP settlements (100m); on south side Wash block (20m), DRP settlements (300m); on east side HBB road (5m), CiC office (10m), DRP settlements (130m) and on west side DRP settlements (200m). There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.



Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. It will not be affected by the construction works, as the activities will be carried out within the existing camp boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

(1) Within/near Elephant Migration Routes Yes/No*

There is no existence of Elephant corridor/ route now, which have been checked on the basis of elephant migration route map established by UNHCR/IUCN (latest updated maps as of 22 February 2018 and later June 05, 2018).

(2) potential impacts on remaining forests in/around camps Yes/No

N/A (This activity will be ensured in DRP community and within existing camp boundary)

(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:
Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation):

N/A (the sub-project will be constructed in a plain land and within an identified camp boundary)

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 700 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2020). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

**State of forestation:**

Patches of vegetation containing large and matured trees on all edges of the proposed subproject area are located within 200m radial distance.

Summary of water balance analysis (For water supply scheme only):

N/A

B.2: Pre construction Phase**Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable):**

20ft. HBB road is passing on the east side of the sub-project. It is possible to carry the construction materials on this road to the construction site.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:

Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.

Possible location of labor camps:

Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.

Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes viii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and ix) clay are the most common type of building material used in construction.

Identification of access road for transportation (Yes/No):

A HBB road is passing on the east side of the sub-project. It is possible to carry the construction materials on this road to the construction site.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with CiC authority.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly

composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 200 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period.

Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

Around 3753 sq. feet land is required for the sub-project establishment.

There is reasonable vegetation around the sub-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No pre-existing drainage channel is found. Though a marshy land is found outside of the construction area, but will not be affected because of having a fair distance from the construction site and the adoption of proper construction site management practices.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

Low. The proposed multipurpose community and service center will be equipped with full facilities for conducting multipurpose services to targeted people, including separate toilets (sanitary) for male and female persons, water supply and filtration, storage and other facilities. No fecal sludge will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be

produced in a typical day and higher amount of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC authority should be made aware of this separation and disposal procedure.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

During the operation phase, this Multipurpose Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There is no protected area in or around the project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

The proposed site is located inside the camp area. Existing HBB road connects the sites with main road. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc. therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because



of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere.	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. - Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of students, children,	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC. - Proper covering of dust producing materials with polythene sheet,	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	animals, etc.)		• Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. • Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is low	• Water spraying at the demolition site • Fencing / Installing barriers should be shield from dust and aggregates • Avoid usage of machines/equipment with extra noise; • Do not accumulate and burn waste at the site • Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders • It needs to Identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies • Make mandatory the use of safety gears (helmets, safety belts, masks, gloves and boot) by workers depending on nature of work.	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.			
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	Under the sub-project intervention, the overall score is low.	- Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. - Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity; Waste disposal record.	Prior to the start of Construction works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. Camp and working areas are to be kept clean and tidy at all times.			
	Accidents	Under the sub-project intervention, the overall score is low.	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. - Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc. should be available in the site during construction period.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score is low.	- Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage. - Involve the community in planning the work program so that any particularly noisy or otherwise invasive activities can be scheduled to avoid sensitive times. - Avoid using of construction equipment	Contractor, environmental specialist of D&SC	Number of complaints from stakeholders, Use of silencers in noise producing equipment	Daily



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			producing excessive noise at school time & at night. • Ear protection devices for the workers & site staffs should be available in site during construction period.		and sound barriers, Noise Level following decibel meter (dB)	
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.	Under the sub-project intervention, the overall score is low.	• Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. • Use tarpaulins to cover soils, sand and other loose material when transported by trucks. • Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free. • Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). • Limiting speed of construction vehicles in work sites to maximum of 20 km/h. • Regular monitoring of air quality.	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution control devices, Maintain records	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	- Prohibit employees from cutting of trees for firewood. - If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. - Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	- Prevent excessive noise; - Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); - No fires permitted on site except if needed for the construction works; - Staff must be trained up for operating equipment, - Availability and access to first-aid equipment and medical supplies. - Ensure the presence and use of safety gear at site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets, Uniforms etc., - Ensure adequate supply of drinking water.	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at project location;	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Sanitation facilities for male & female workers separately.			
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - All affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; - All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; - The contractor must arrange the cancellation of all temporary services;	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works
	Odor& waste disposal	Under the issue the overall score is low.	Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and PMU	Complaints from communities	Site inspection daily / weekly basis.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Vegetation	Under the issue the overall score is low.	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions;	Over the completion of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turfing, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required. Mention some recommendation on E&S assessment ESMP*

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.



Appendix-2

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Construction of 22 Multipurpose Service Center Steel Frame Building (LGED/EMCRP-W4): MPSC of Rohingya Camp-4Ext., Block-CiC office

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of	Selected site will be far away from any water bodies or	PIU & Contractor	Environmental Consultant of PIU,



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	natural drainage	natural flow path to avoid the flash flood or any kind or surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.		PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	- Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. - It will be ensured that proper training and guidance are provided on general and occupational health and safety to Contractors' personnel and labors forces, and records of	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		training sessions are to be kept on site. All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. - Adequate facilities ensuring sanitation for labor camps will	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		be put in place. - Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labour forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared time to time for all types of work activities on site. - Proper walkways will be prepared for students and teachers in existing school boundary. - Proper Signpost at any slippery areas will be ensured in construction site.	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. - Adequate quantities of drinking water will be available at all		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Maintenance of assets, properties and	Periodic maintenance of building structures, plumbing, water filtering and electric equipment has to be carried out.	The party CiC find fit	UNO, Upazila Chairman of Upazila



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	equipment	- Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.		Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization works:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.



- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.
- Kitchen space disassembling must be treated with same level of accuracy and caution.
- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.

For wastes generated from construction and demobilization debris:



- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.
- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.
- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site.
- Burning of any type of wastes in the construction site shall be prohibited completely.

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**Appendix-3****Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC**

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 20,000	20,000
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles	LS	LS @ Tk 30,000	30,000
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u>	2 nos.	@10,000 each	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.			
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.	2 no.	LS @ Tk. 30,000	60,000
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months	57,272.73



Sl no.	Description of item	Quantity	Unit price	Total amount
	per direction of the E.I.C. The Safeguard personnel will take duty for 11 sites, so one-eleventh of the personnel cost is counted here.		(1/11 one site). (Net payment excluding Tax & VAT)	
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73

Cost of H&S Measures under COVID 19 Situations

Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No.	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	

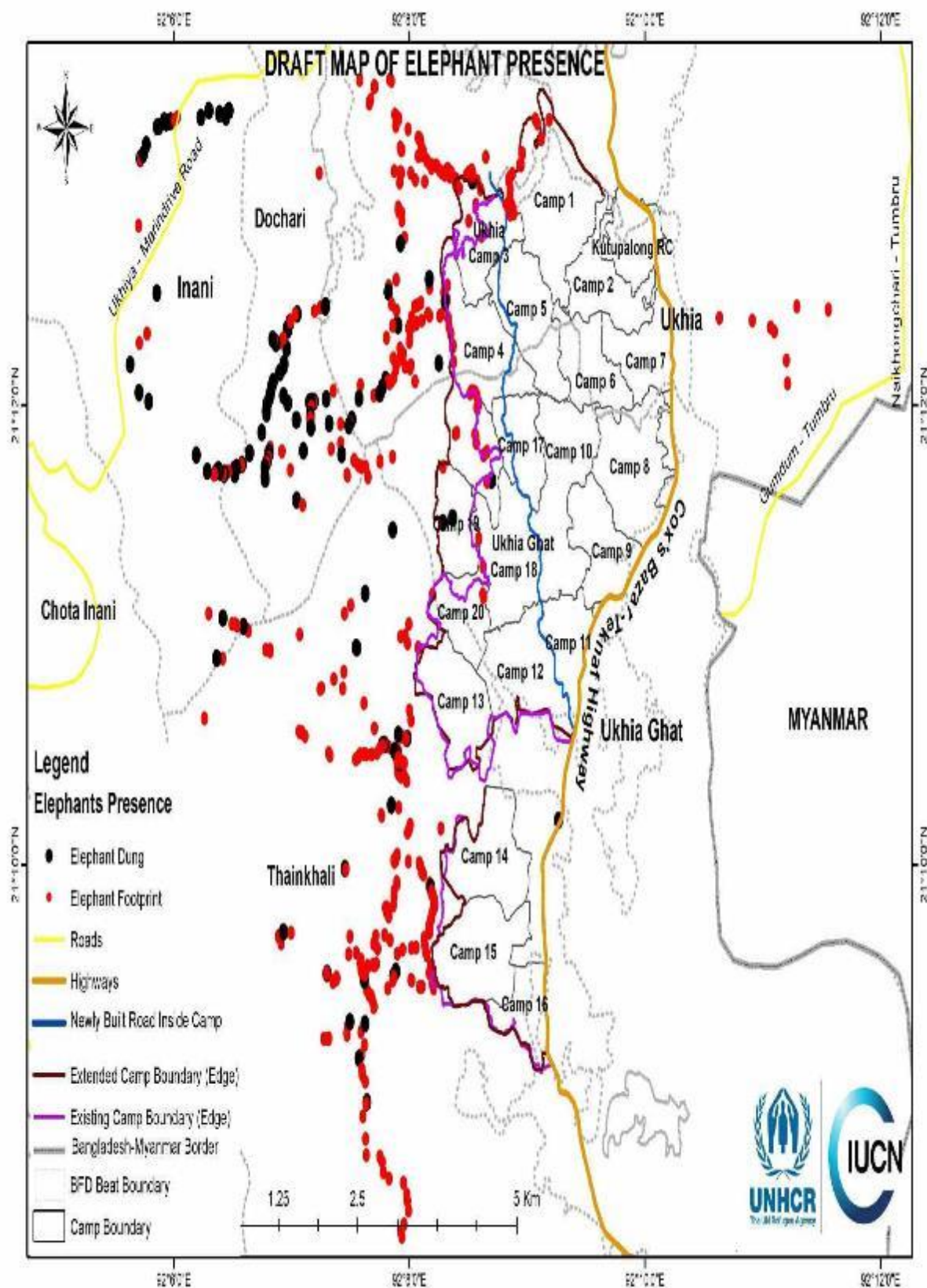


Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
	Bin							
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for Refill)	2 bottles and 1 Can for each site	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.



Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						165,125.00	

Appendix-4



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

3

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

জরুরী ভিত্তিতে রোহিঙ্গা সংকট মোকাবেলায় মান্দি সেক্টর প্রকল্প
Local Government Engineering Department (LGED)
Public Consultation Participants List

Focus Group Discussion

সময় : ০১:৩০ pm - তারিখ : ১৭.০৬.২০২০

উপ-প্রকল্প/কমপোনেন্ট এর নাম : MPSC- Camp-4 Ext: Block-CIE office

মত বিনিময় স্থান : Camp-4 Ext: Block-CIE office বঙ্গবন্ধু

ইউনিয়ন : পটুয়াখালী ওয়ার্ড নং : ডাকঘর : পটুয়াখালী উপজেলা : জেলা : কক্সবাজার

সাব প্রকল্প নং : EMCRP/W-4

অংশগ্রহণকারীদের হাজিরা (পরিচয় ও স্বাক্ষর)

ক্রম নং	নাম	বয়স	পুরুষ/নারী	গ্রাম	স্বাক্ষর / টিপসই
১	কোমল চিত্ত	৪০	পুরুষ	Camp-4 Ext	চিত্ত
২	মোস্তাফিজুল	৩২	প	"	মোস্তাফিজুল
৩	আবদুল হক	২৮	প	"	আবদুল হক
৪	মাসুদ	৩৬	প	"	মাসুদ
৫	সাব্বির হোসেন	২৭	প	"	সাব্বির হোসেন
৬	সাব্বির হোসেন	৩২	প	"	সাব্বির হোসেন
৭	মাসুদ হোসেন	৪৫	প	"	মাসুদ হোসেন
৮	কিফায়েত হোসেন	২২	প	"	কিফায়েত হোসেন
৯	সাব্বির হোসেন	৩০	প	"	সাব্বির হোসেন
১০	সাব্বির হোসেন	২৬	প	"	সাব্বির হোসেন

Public consultation participant list



Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762

IDA Credit No. 5561-BD



ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of
Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-3,
Block-CiC office, Type-3
Union: Palongkhali; Upazila: Ukhiya
District: Cox's Bazar

Funded by:



Government of the People's Republic of Bangladesh & World Bank

Design and Supervision Consultancy:



Development Design Consultants Ltd.

March 2021

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department

MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank



1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Community and Service Centers are to offer the facilities which will improve the availability.

These Multipurpose Community and Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which are identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multipurpose Community and Service Center (MPSC) will be constructed under Palongkhali union in Rohingya camp number 2, Block CiC office of Ukhiya Upazila under Cox's Bazar district. The catchment area of the subproject comprises the surrounding area of Rohingya camp 3. Typical camp settlement settings of the area are no exception than other

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

camp locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya Camp-3, Block- CiC office
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
Owner of land	Government
Land Available (sq.ft.)	4050
Structural Design Option	Type-3 (Rectangular Steel Frame 2-story building (80 feet x 41 feet 7 inches)
Catchment area	Camp-3
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	There is no direct route to connect the facility since it is inside camp location.
Land acquisition	Not required
Current land condition	The location is on identified open space.

[D&SC and Field survey, 2021]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-3; Block-CiC office		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3336
Number of Floors	2	3336X2
Number of Class room (sq. feet)	3	each@ 11'-7"X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.

1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-3, Block-CiC office of Ukhiya Upazila in Cox's Bazar District. The site location is just beside the Camp 3 CiC office which is currently vacant and on relatively a high plain land. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Community and Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
GPS position	21.208100 N and 92.152172 E
Distance from Upazila HQ	8 km
Nearby major road	HBB camp connecting road
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2021]

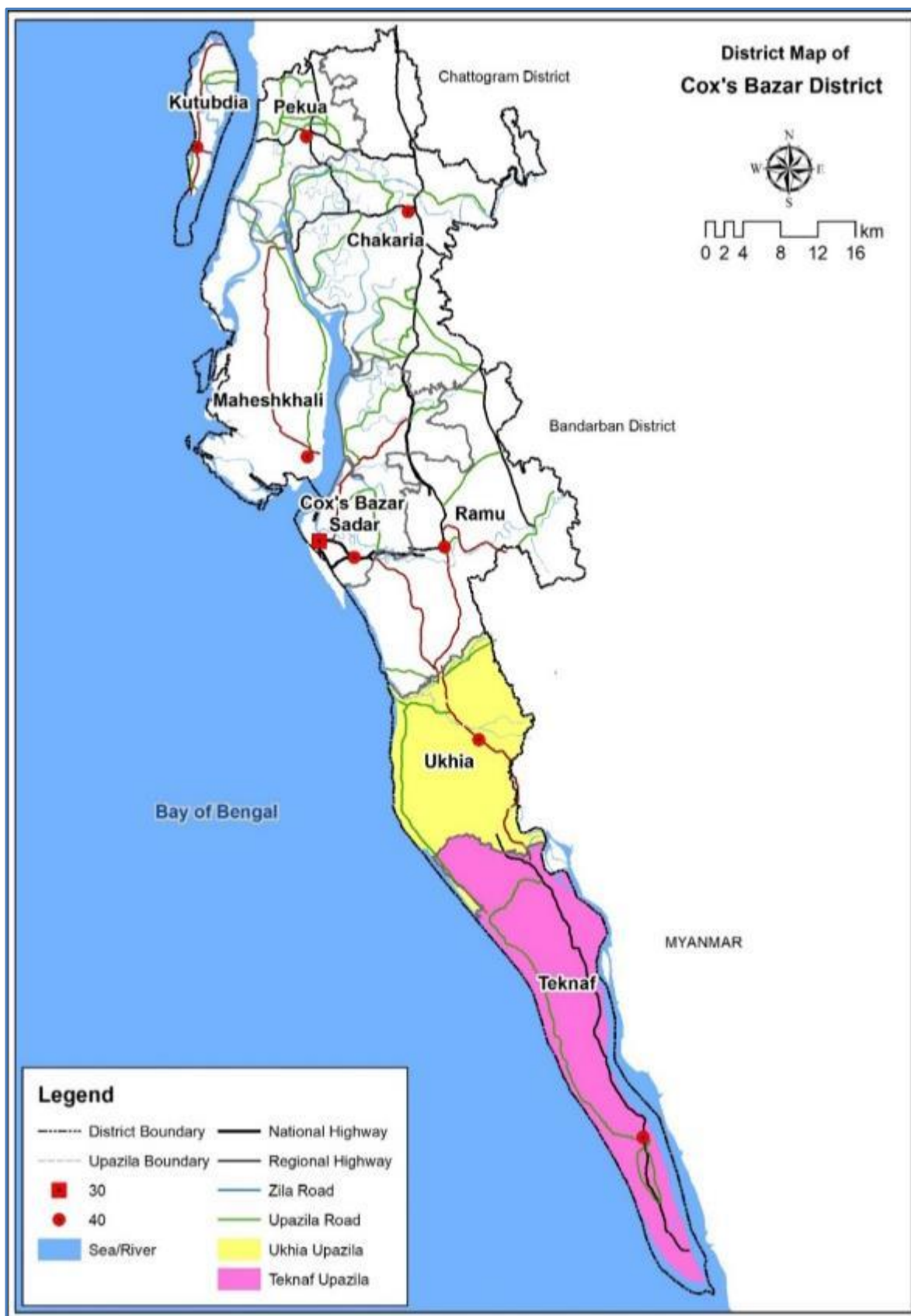


Figure 1.3.1: District Map with project location

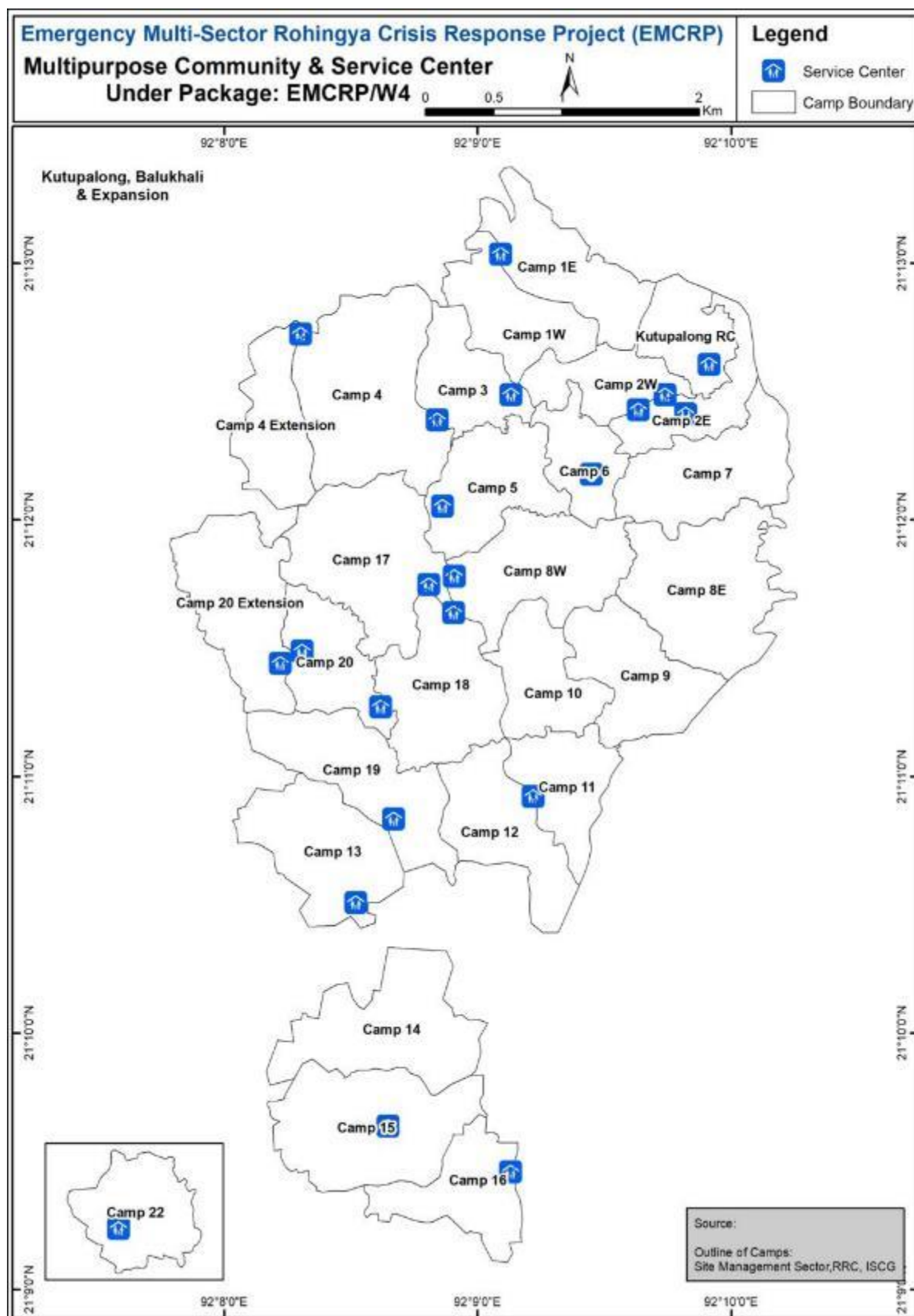
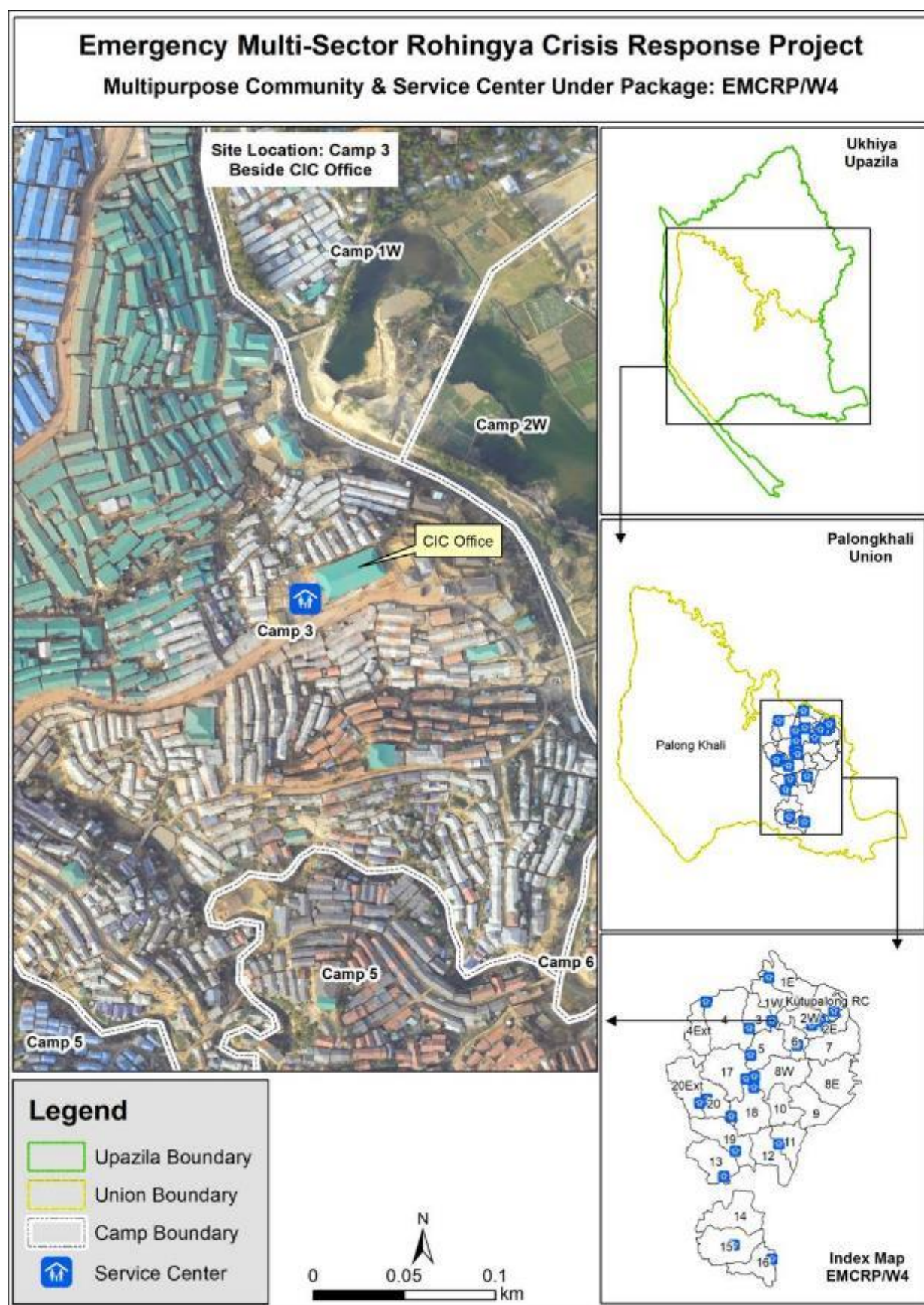


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)



1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	DRP settlements (50m), shops (50m), Brac office (80m), Darul Arkan mosque (50m), Mukti Cox's Bazar school (60m)
South side	DRP settlements (50m), Brac school (40m)
East side	Ad-tech office (20m), DRP settlements (70m)
West side	Mosque (35m), Brac office (70m), DRP settlements (80m)

[Sources of data: D&SC Field survey, 2021]



Figure 1.4.1: Present condition of the Sub-project area



Figure 1.4.2: Proposed location of MPSC construction

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 08 February 2021 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 14 persons, and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location in particular has no major complications and is in relevance with the CiC office authority currently. Present Camp in Charge (CiC) has suggested to start the development works as early as possible.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Rohingya Camp-3; Block-CiC office and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Figure 2.1.1: Public Consultation Meeting in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people considered that the selected site is suitable for the construction of Multipurpose service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.
- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.

- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.
- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment. Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 08 February 2021 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected sited allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. On the north side DRP settlements (50m), shops (50m), Brac office (80m), Darul Arkan mosque (50m), Mukti Cox's Bazar school (60m); on the south side of the sub-project area DRP settlements (50m), Brac school (40m); on the east side Ad-tech office (20m), DRP settlements (70m)

and on the west side a mosque (35m), Brac office (70m), DRP settlements (80m). Few disturbance to some of these establishments/features is anticipated due to construction activities for the case of not being in a sufficient distance from the construction site which is why safety measures such as, strict construction site management system- including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials et cetera should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from piling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from piling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routs and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the mitigation options, different initiatives have been undertaken, such as formation and capacity development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones, as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree planation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones have been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tubewell in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.



4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose Community and Service Center will be constructed on a high land where some matured vegetation is found. Due to the construction activities of this Sub-project, trees (small and medium size) will not be cut down as well as 10 nos. of trees will be planted in the target location. Further, some settlements on the sub-project area might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall effects for this proposed construction works are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of

consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.
- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.
- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust

Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures are being realized over time. A comprehensive monitoring framework is suggested in Project ESMF and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguards specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in

the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.



- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.



Appendix-1

Environmental Screening Form

Sub-Project Description Form: (MPSC of Rohingya Camp-3, Block-CiC office)

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Ukhiya

Union: Palongkhali

Name of Community/Local Area: Palongkhali, Rohingya Camp-3.

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose community and Service Center Steel Frame 2-story building will be constructed within target location.

Estimated footprint / land area for this sub-project is 4050 sq. feet

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.): Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified location on Rohingya camp 3, Block CiC office area. On the north side DRP settlements (50m), shops (50m), Brac office (80m), Darul Arkan mosque (50m), Mukti Cox's Bazar school (60m); on the south side of the sub-project area DRP settlements (50m), Brac school (40m); on the east side Ad-tech office (20m), DRP settlements (70m) and on the west side a mosque (35m), Brac office (70m), DRP settlements (80m). Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to construction of a new building on the targeted place. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic. Human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified. On the north side DRP settlements (50m), shops (50m), Brac office (80m), Darul Arkan mosque (50m), Mukti Cox's Bazar school (60m); on the south side of the sub-project area DRP settlements (50m), Brac school (40m); on the east side Ad-tech office (20m), DRP settlements (70m) and on the west side a mosque (35m), Brac office (70m), DRP settlements (80m) are present on the surrounding target area.

Some degree of disturbance is anticipated due to construction activities to those components since they are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration route were nearly 1 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 03. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

Sub-project Location:

The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district.



The sub-project area is located at 21.208100 N and 92.152172 E. The distance from the Upazila headquarter is about 8 km.

Land ownership

Land is owned by Government.

Expected construction period: 18 (Eighteen months)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

Project intervention area is found to be an open space, but influence area should consider nearly half a kilometer radius around the proposed site.

On the north side DRP settlements (50m), shops (50m), Brac office (80m), Darul Arkan mosque (50m), Mukti Cox's Bazar school (60m); on the south side of the sub-project area DRP settlements (50m), Brac school (40m); on the east side Ad-tech office (20m), DRP settlements (70m) and on the west side a mosque (35m), Brac office (70m), DRP settlements (80m) but there is no chance to disturbance during this construction activity.

But there is no scope to be affected by the construction activities. No structures, trees and livelihood will be affected by this construction activity. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby.

Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

Section B: Environmental Screening

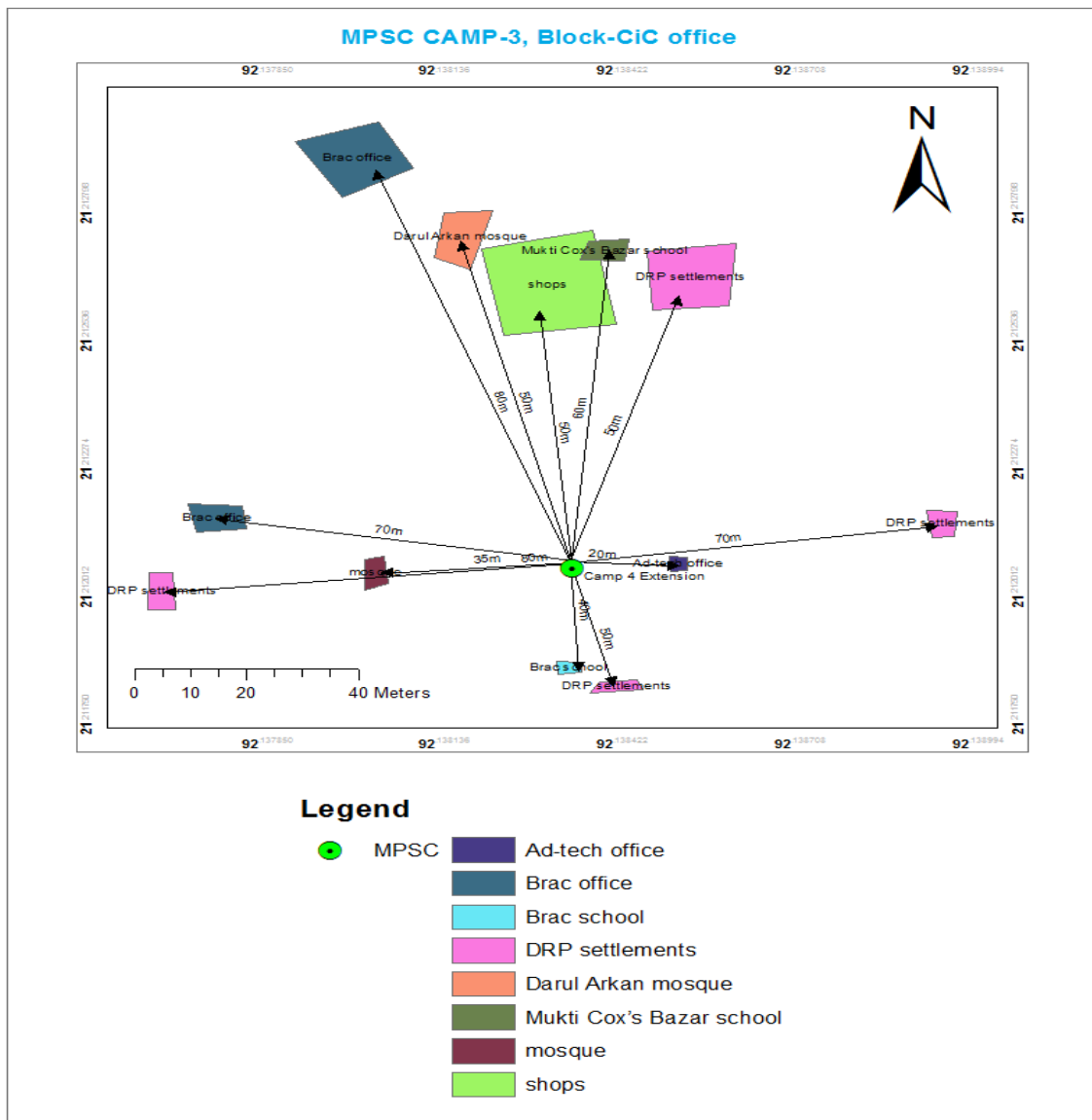
B.1: Environmental feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

On the north side DRP settlements (50m), shops (50m), Brac office (80m), Darul Arkan mosque (50m), Mukti Cox's Bazar school (60m); on the south side of the sub-project area DRP settlements (50m), Brac school (40m); on the east side Ad-tech office (20m), DRP settlements (70m) and on the west side a mosque (35m), Brac office (70m), DRP settlements (80m).

There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.



Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. It will not be affected by the construction works, as the activities will be carried out within the existing camp boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

(1) Within/near Elephant Migration Routes Yes/No*

There is no existence of Elephant corridor/ route now, which have been checked on the basis of elephant migration route map established by UNHCR/IUCN (latest updated maps as of 22 February 2018 and later June 05, 2018).

(2) potential impacts on remaining forests in/around camps Yes/No

N/A (This activity will be ensured in DRP community and within existing camp boundary)

(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:
Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation):

N/A (the sub-project will be constructed in a plain land and within an identified camp boundary)

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 700 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2021). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)

Status of wildlife movement:



N/A (None of the information was found about the wildlife movement in or across the area)
State of forestation: Patches of vegetation containing large and matured trees on all edges of the proposed subproject area are located within 200m radial distance.
Summary of water balance analysis (For water supply scheme only): N/A

B.2: Pre construction Phase

Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable): A HBB road is passing on the south side of the sub-project. It is possible to carry the construction materials on this road to the construction site.
Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction: Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.
Possible location of labor camps: Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.
Requirement and type of raw materials (e.g. sand, stone, wood, etc.): i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes vii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and viii) clay are the most common type of building material used in construction.
Identification of access road for transportation (Yes/No): A HBB road is passing on the south side of the sub-project. It is possible to carry the construction materials on this road to the construction site.
Location identification for raw material storage: Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with CiC authority.
Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 200 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period.

Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

Around 3336 sq. feet land is required for the sub-project establishment.

There is reasonable vegetation around the sup-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No pre-existing drainage channel is found. Though a marshy land is found outside of the construction area, but will not be affected because of having a fair distance from the construction site and the adoption of proper construction site management practices.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by

induced development: (High/Medium/Low with description)

Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase
Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

Low. The proposed multipurpose community and service center will be equipped with full facilities for conducting multipurpose services to targeted people, including separate toilets (sanitary) for male and female persons, water supply and filtration, storage and other facilities. No fecal sludge

will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be produced in a typical day and higher amount of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC authority should be made aware of this separation and disposal procedure.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

During the operation phase, this Multipurpose Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There is no protected area in or around the project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

The proposed site is located inside the camp area. A HBB road connects the sites with another camp road. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers



etc. therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere.	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. - Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	students, children, animals, etc.)		• Proper covering of dust producing materials with polythene sheet, • Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. • Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is low	• Water spraying at the demolition site • Fencing / Installing barriers should be shield from dust and aggregates • Avoid usage of machines/equipment with extra noise; • Do not accumulate and burn waste at the site • Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders • It needs to Identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- Make mandatory the use of safety gears (helmets, safety belts, masks, gloves and boot) by workers depending on nature of work. - Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.			
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	Under the sub-project intervention, the overall score is low.	- Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. - Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. - Provision of waste bins/ cans, where	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity; Waste disposal record.	Prior to the start of Construction works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times.			
	Accidents	Under the sub-project intervention, the overall score is low.	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. - Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc. should be available in the site during construction period.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score is low.	- Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage. - Involve the community in planning the work	Contractor, environmental specialist of D&SC	Number of complaints from stakeholders, Use of silencers	Daily



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			program so that any particularly noisy or otherwise invasive activities can be scheduled to avoid sensitive times. • Avoid using of construction equipment producing excessive noise at school time & at night. • Ear protection devices for the workers & site staffs should be available in site during construction period.		in noise producing equipment and sound barriers, Noise Level following decibel meter (dB)	
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation	Under the sub-project intervention, the overall score is low.	• Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. • Use tarpaulins to cover soils, sand and other loose material when transported by trucks. • Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free. • Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). • Limiting speed of construction vehicles in work sites to maximum of 20 km/h.	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution control devices, Maintain	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	measures.		Regular monitoring of air quality.		records	
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	- Prohibit employees from cutting of trees for firewood. - If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. - Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	- Prevent excessive noise; - Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); - No fires permitted on site except if needed for the construction works; - Staff must be trained up for operating equipment, - Availability and access to first-aid equipment and medical supplies. - Ensure the presence and use of safety gear at site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets,	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at project location;	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Uniforms etc., - Ensure adequate supply of drinking water. - Sanitation facilities for male & female workers separately.			
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - All affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; - All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; - The contractor must arrange the cancellation of all temporary services;	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works
	Odor& waste disposal	Under the issue the overall score is low.	Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and PMU	Complaints from communities	Site inspection daily / weekly basis.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Vegetation	Under the issue the overall score is low.	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions;	Over the completion of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turving, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required.* Mention some recommendation on E&S assessment ESMP

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.



Appendix-2

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Construction of 22 Multipurpose Service Center Steel Frame Building (LGED/EMCRP-W4): MPSC of Rohingya Camp-3, Block-CiC office

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of	Selected site will be far away from any water bodies or	PIU & Contractor	Environmental Consultant of PIU,



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	natural drainage	natural flow path to avoid the flash flood or any kind or surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.		PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	- Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. - It will be ensured that proper training and guidance are provided on general and occupational health and safety to Contractors' personnel and labors forces, and records of	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		training sessions are to be kept on site. All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. - Adequate facilities ensuring sanitation for labor camps will	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		be put in place. - Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labour forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared time to time for all types of work activities on site. - Proper walkways will be prepared for students and teachers in existing school boundary. - Proper Signpost at any slippery areas will be ensured in construction site.	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. - Adequate quantities of drinking water will be available at all		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Maintenance of assets, properties and	Periodic maintenance of building structures, plumbing, water filtering and electric equipment has to be carried out.	The party CiC find fit	UNO, Upazila Chairman of Upazila



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	equipment	- Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.		Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization works:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.



- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.
- Kitchen space disassembling must be treated with same level of accuracy and caution.
- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.

For wastes generated from construction and demobilization debris:



- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.
- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.
- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site.
- Burning of any type of wastes in the construction site shall be prohibited completely.

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**Appendix-3****Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC**

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

SI no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all	Each	Lump sum @ 20,000	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	complete as per direction of E.I.C.			
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles	LS	LS @ Tk 30,000	30,000
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	2 nos.	@10,000 each	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.	2 no.	LS @ Tk. 30,000	60,000
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. The Safeguard personnel will take duty for 11 sites, so one-eleventh of the personnel	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months (1/11 one site). (Net payment excluding Tax	57,272.73



Sl no.	Description of item	Quantity	Unit price	Total amount
	cost is counted here.		& VAT)	
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73

Cost of H&S Measures under COVID 19 Situations

Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	

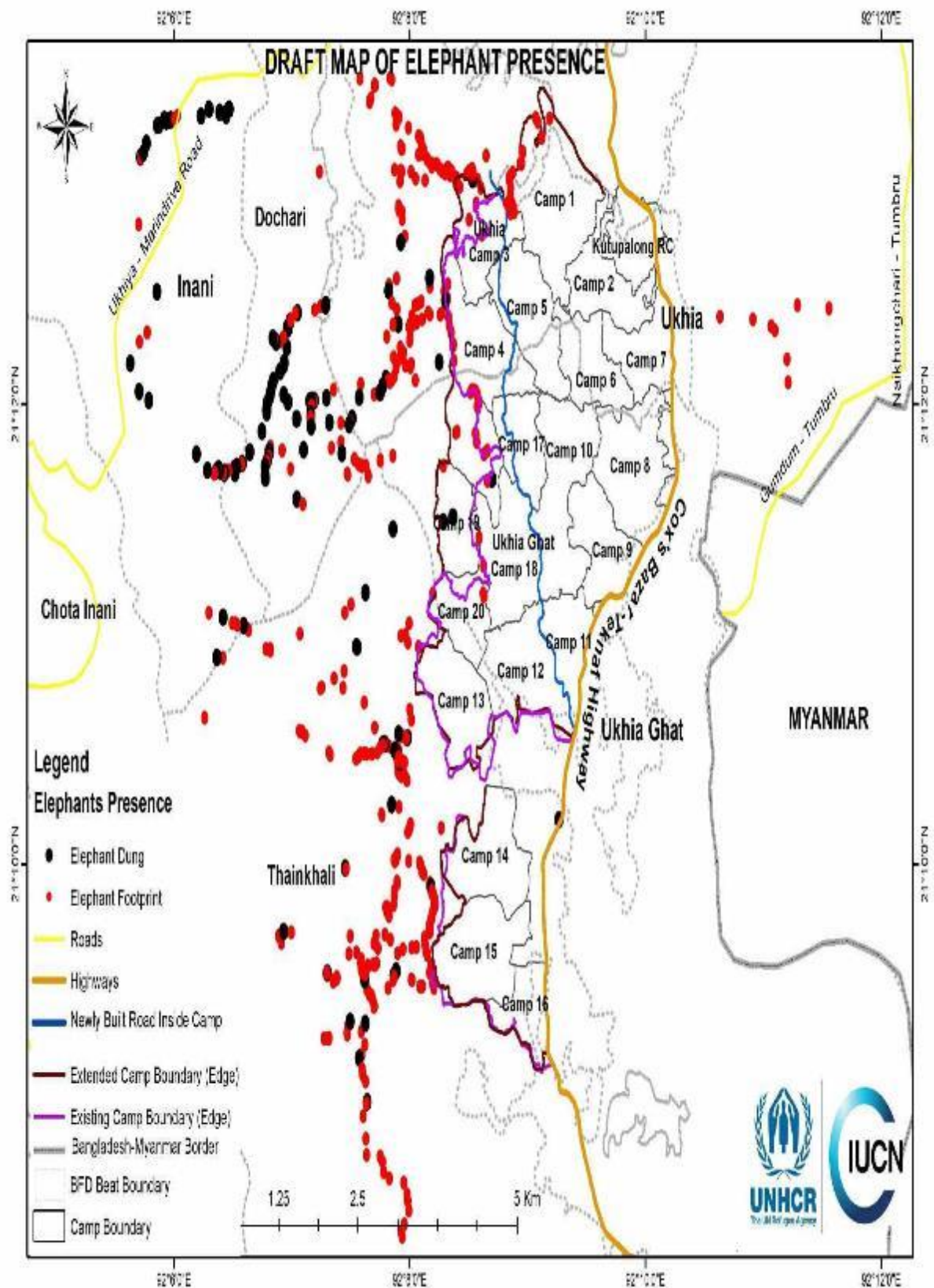


Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for Refill)	2 bottles and 1 Can for each site	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper



Sl. No .	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
								documentation
	Grand Total						165,125.00	

Appendix-4



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

**Camp-3, Block-CIC office Multipurpose Community and Service Center
(Package Number: EMCRP/W4)**

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

জরুরী ভিত্তিতে রোহিঙ্গা সংকট মোকাবেলায় মানসিক সেবাসহ প্রকল্প

Local Government Engineering Department (LGED)

Public Consultation Participants List

Focus Group Discussion

সময়: ২:০০ pm

তারিখ: ০৪.০২.২১

উপ-প্রকল্প/সেবা কেন্দ্র এর নাম: CIC- ০৩ MESC

এখানে স্থান: নতুন মার্কেট মোকাবেলায় সেন্টার, CIC এর opposite

ইউনিয়ন: নতুন মার্কেট

ওয়ার্ড নং:

ডাকঘর: ইমুসানী

উপজেলা: ইমুসানী

জেলা: কক্সবাজার

সাব প্রকল্প নং: EMCRP/W-4

অংশগ্রহণকারীদের তালিকা (পরিচয় ও স্বাক্ষর)

ক্রম নং	নাম	বয়স	পুরুষ/নারী	গ্রাম	স্বাক্ষর / চিহ্নসহ
০১	শ্রী: ইমুসানী	২০	পুরুষ	Camp-03	ইমুসানী
০২	শ্রী: নতুন মার্কেট	১০	"	"	নতুন মার্কেট
০৩	শ্রী: ইমুসানী	০৯	"	"	ইমুসানী
০৪	শ্রী: ইমুসানী	২২	"	"	ইমুসানী
০৫	শ্রী: ইমুসানী	২০	"	"	ইমুসানী
০৬	শ্রী: ইমুসানী	২৪	"	"	ইমুসানী
০৭	শ্রী: ইমুসানী	২৬	"	"	ইমুসানী
০৮	শ্রী: ইমুসানী	২২	"	"	ইমুসানী
০৯	শ্রী: ইমুসানী	২২	"	"	ইমুসানী
১০	শ্রী: ইমুসানী	২২	"	"	ইমুসানী
১১	শ্রী: ইমুসানী	২২	"	"	ইমুসানী
১২	শ্রী: ইমুসানী	২২	"	"	ইমুসানী
১৩	শ্রী: ইমুসানী	২২	"	"	ইমুসানী
১৪	শ্রী: ইমুসানী	২২	"	"	ইমুসানী
১৫	শ্রী: ইমুসানী	২২	"	"	ইমুসানী
১৬	শ্রী: ইমুসানী	২২	"	"	ইমুসানী
১৭	শ্রী: ইমুসানী	২২	"	"	ইমুসানী
১৮	শ্রী: ইমুসানী	২২	"	"	ইমুসানী
১৯	শ্রী: ইমুসানী	২২	"	"	ইমুসানী
২০	শ্রী: ইমুসানী	২২	"	"	ইমুসানী

Public consultation participant list



Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762

IDA Credit No. 5561-BD



ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-4, Block-F, Type-3
Union: Palongkhali; Upazila: Ukhiya
District: Cox's Bazar

Funded by:



Government of the People's Republic of Bangladesh & World Bank

Design and Supervision Consultancy:



Development Design Consultants Ltd.

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling

LGED	Local Government Engineering Department
MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank



1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Community and Service Centers are to offer the facilities which will improve the availability.

These Multipurpose community and Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which are identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multi-purpose Community and Service Center (MPSC) will be constructed under Palongkhali union in Rohingya camp number 4, Block F of Ukhiya Upazila under Cox's Bazar district. The catchment area of the sub-project comprises the surrounding area of Rohingya camp 4. Typical camp settlement settings of the area are no exception than other camp locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya camp-4, Block-F
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
Owner of land	Government
Land Available (sqft.)	4250
Structural Design Option	Type-03 (Rectangular Steel Frame 2-storey building (80 feet x 41 feet 7 inches)
Catchment area	Rohingya Camp-4
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	There is no direct route to connect the facility since it is inside camp location.
Land acquisition	Not required
Current land condition	The location is on open space.

[D&SC and Field survey, 2020]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-4; Block-F		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3336
Number of Floors	2	3336X2
Number of Class room (sq. feet)	3	each@ 11'-7" X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.

1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-4, Block-F of Ukhiya Upazila in Cox's Bazar District. The site location is relatively a high plain land and beside CiC office to the N/W side. The main connecting road is to the west side (infront of CiC office). The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Community and Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
GPS position	21.206478 N, 92.147318 E
Distance from upazila HQ	7 km
Nearby major road	20 ft. Rohingya camp connecting road
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2020]

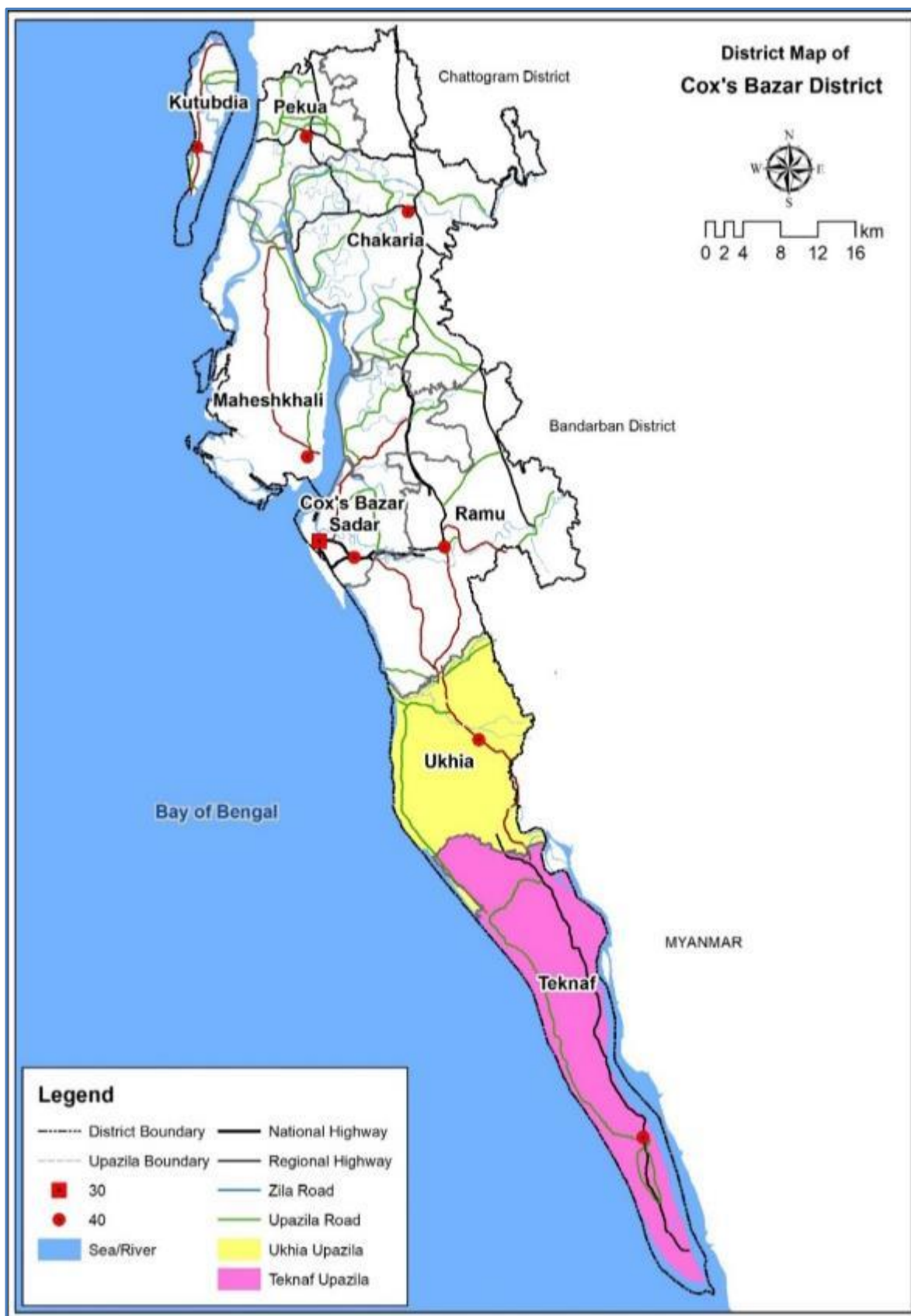


Figure 1.3.1: District Map with project location

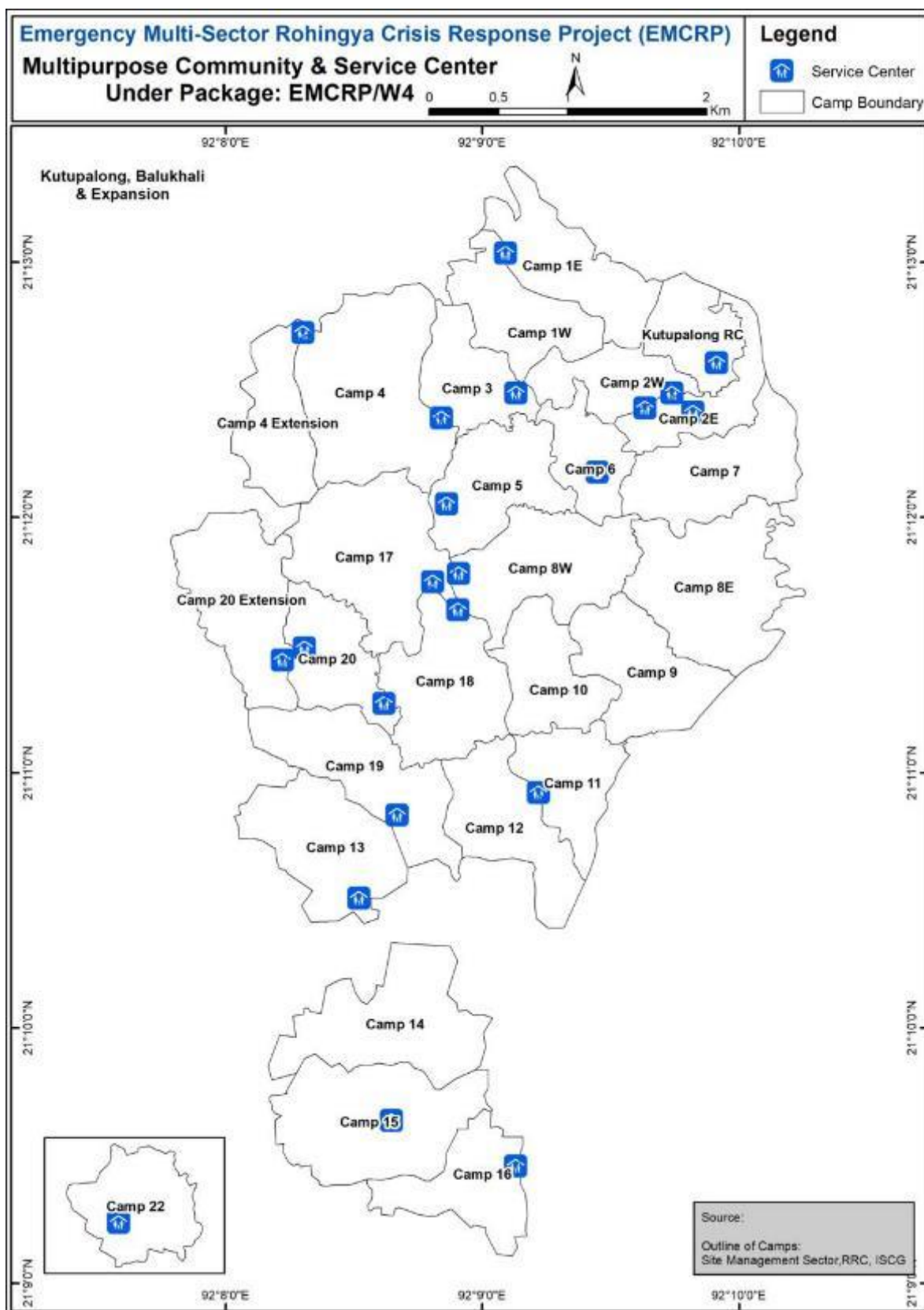


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)

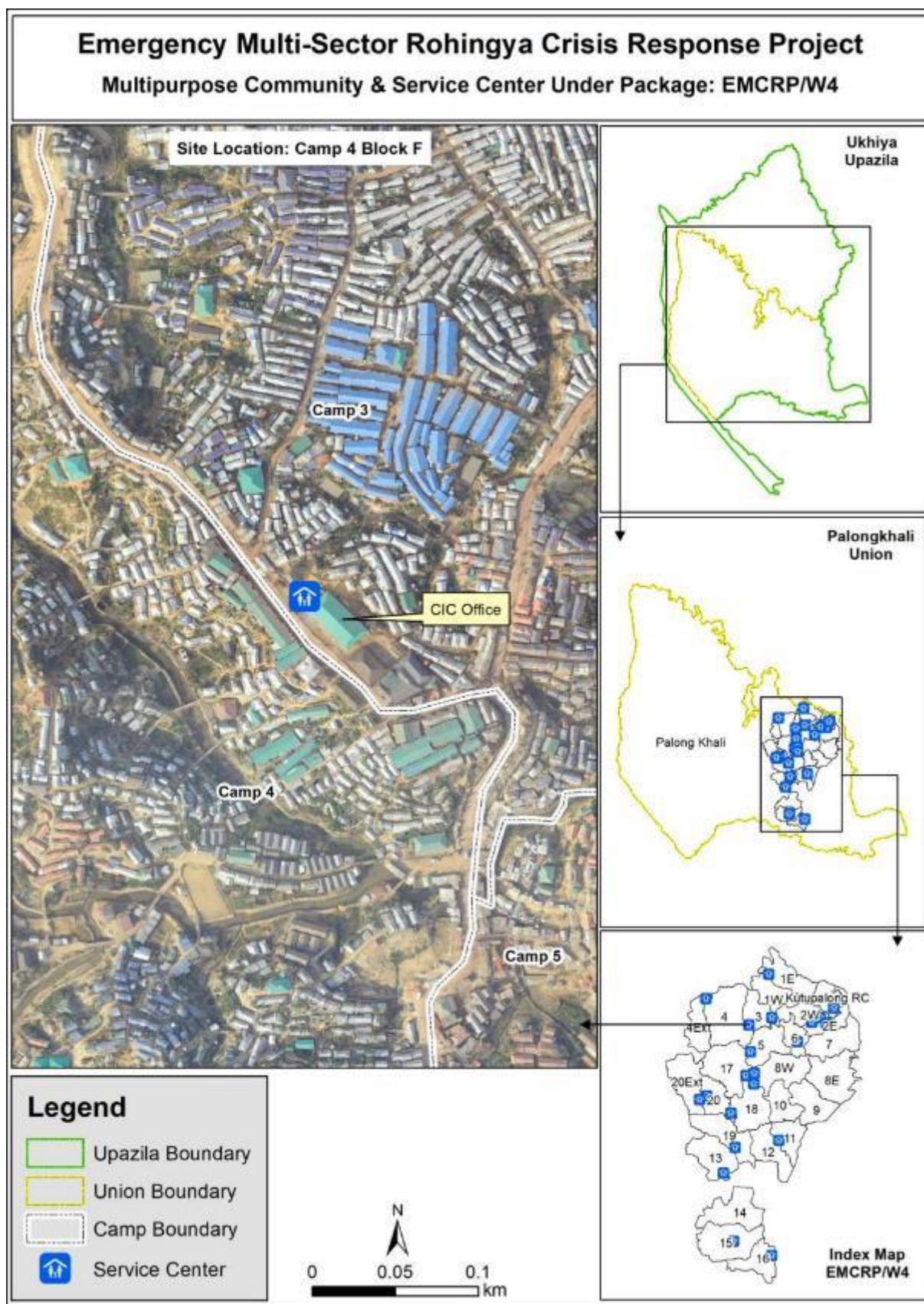


Figure 1.3.3: Union Map with Sub-project location in Camp area

1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	Fire post (15m), fences (5m), DRP shelters (20m)
South side	CiC office (5m), Parking space (5m)
East side	DRP shelters (25m)
West side	Fences (5m), 20ft. HBB road (5m), DRP shelters (25m)

[Sources of data: D&SC Field survey, 2020]



Figure 1.4.1: Present condition of the Sub-project area



Figure 1.4.2: Proposed location of MPSC construction

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 19 March 2020 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 12 persons, and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location in particular has no major complications and is in relevance with the CiC office authority currently. Present Camp in Charge (CiC) has suggested to start the development works as early as possible.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Rohingya Camp 4; Block-F and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the

project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Consultation with CiC Office Authority



Consultation with DRP

Figure 2.1.1: Public Consultation Meeting in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people (DRP) considered that the selected site is suitable for the construction of Multipurpose community and service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.

- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.
- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.
- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment. Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 19 March 2020 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected site allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. On the north of the sub project fire post (15m), DRP settlements (20m); On the west side of the sub-project area 20ft HBB road (5m), DRP settlements (25m); On the East side DRP

settlements (25m) and on the south side CiC office (5m). Few disturbances to some of these establishments/features is anticipated due to construction activities for the case of not being in a sufficient distance from the construction site which is why safety measures such as, strict construction site management system- including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials etc. should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from piling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from piling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routs and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the mitigation options, different initiatives have been undertaken, such as formation and capacity development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones, as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree planation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones have been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tubewell in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose community and Service Center will be constructed on a high land where some matured vegetation is found. Due to the construction activities of this Sub-project, few numbers of trees (small and medium size) will be cut down and as a mitigation measure, 10 nos. of trees will be replanted in the target location. Further, some settlements on 20m east side of sub-project area might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall effects for this proposed construction works are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing

pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.
- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.
- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust

Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures are being realized over time. A comprehensive monitoring framework is suggested in Project ESMF and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguards specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in

the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.



- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.

Appendix-1**Environmental Screening Form**

Sub-Project Description Form: (MPSC of Rohingya Camp-4, Block-F)

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Ukhiya

Union: Palongkhali

Name of Community/Local Area: Palongkhali, Rohingya Camp-4

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose community and Service Center Steel Frame two story building will be constructed within target location.

Estimated footprint / land area for this sub-project is 4,250 sq. ft.

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.): Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified location of Rohingya camp 4, Block F. On the north of the sub project a Fire post, DRP households; On the west side of the sub-project area 20ft. HBB road; On the East DRP households and on the south CiC office, parking spaces. Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the



ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to construction of a new building on the targeted location. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic. Human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified. On the north of the sub project fire post (15m), DRP settlements (20m); On the west side of the sub-project area 20ft HBB road (5m), DRP settlements (25m); On the East side DRP settlements (25m) and on the south side CiC office (5m) are present on the surrounding target area.

Some degree of disturbance is anticipated due to construction activities to those components since they are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration route was nearly 2 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 03. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

Sub-project Location:

The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district. The sub-project area is located at 21.206478 N and 92.147318 E. The distance from the Upazila headquarter is about 7 km. Nearby major road is 20 ft. HBB Rohingya camp connecting road.

Land ownership

Land is owned by Government.



Expected construction period: 18 (Eighteen months)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

Project intervention area is to be an open space, but influence area should consider nearly half a kilometer radius around the proposed site.

On the north of the sub project fire post (15m), DRP settlements (20m); On the west side of the sub-project area 20ft HBB road (5m), DRP settlements (25m); On the East side DRP settlements (25m) and on the south side CiC office (5m) but there is no chance to disturbance during this construction activity. No structures, trees and livelihood will be affected by this construction activity. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby.

Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

Section B: Environmental Screening

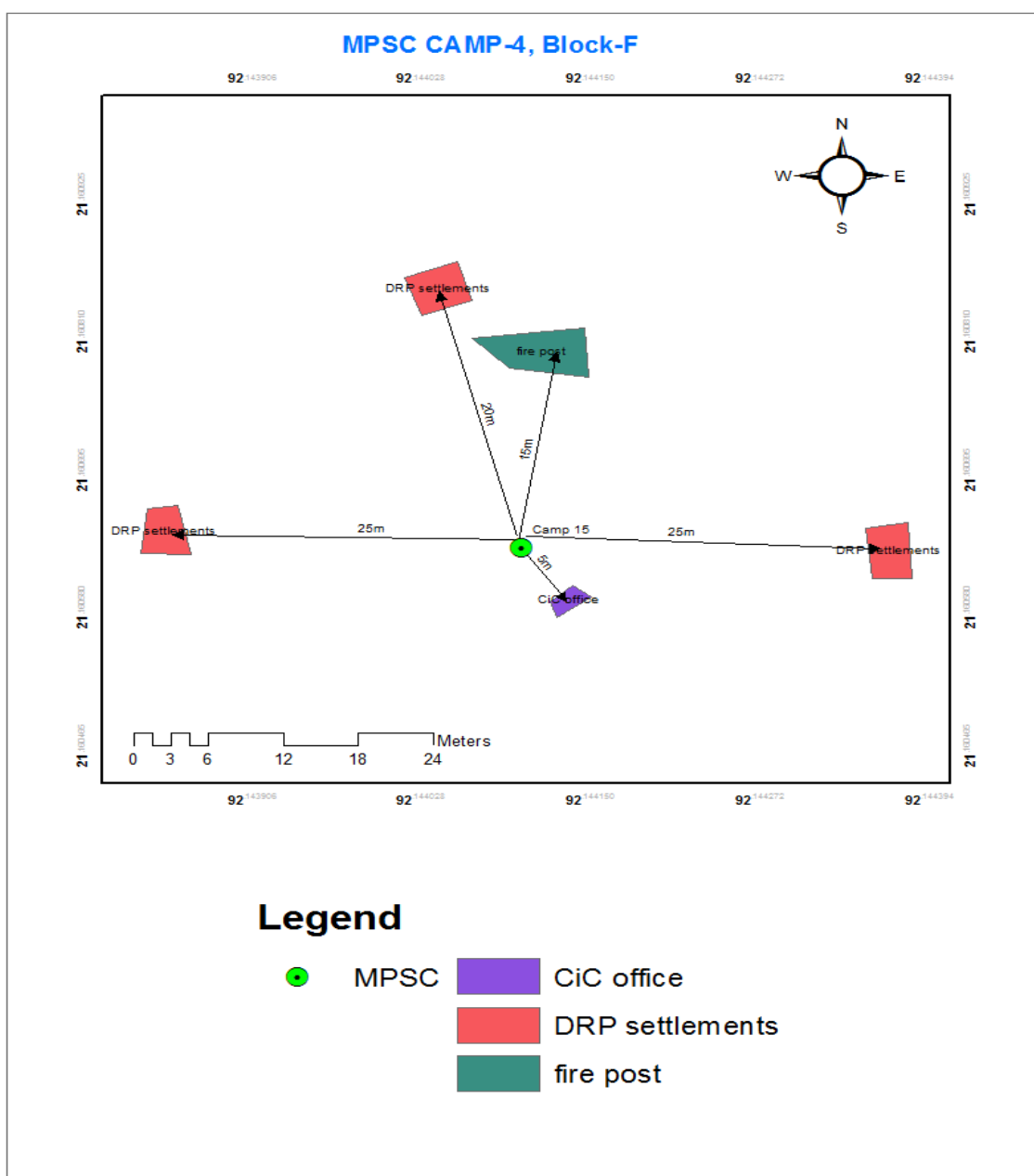
B.1: Environmental feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

On the north of the sub project fire post (15m), DRP settlements (20m); On the west side of the sub-project area 20ft HBB road (5m), DRP settlements (25m); On the East side DRP settlements (25m) and on the south side CiC office (5m).

There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.



Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. It will not be affected by the construction works, as the activities will be carried out within the existing camp boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

(1) Within/near Elephant Migration Routes Yes/No*

There is no existence of Elephant corridor/ route now, which have been checked on the basis of elephant migration route map established by UNHCR/IUCN (latest updated maps as of 22 February 2018 and later June 05, 2018).

(2) potential impacts on remaining forests in/around camps Yes/No

N/A (This activity will be ensured in DRP community and within existing camp boundary)

(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:
Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation):

N/A (the sub-project will be constructed in a plain land and within an identified camp boundary)

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 700 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2020). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to



681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)
Status of wildlife movement:
N/A (None of the information was found about the wildlife movement in or across the area)
State of forestation:
Patches of vegetation containing large and matured trees on all edges of the proposed subproject area are located within 200m radial distance.
Summary of water balance analysis (For water supply scheme only):
N/A

B.2: Pre construction Phase

Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable):
A 20ft HBB road is passing on the west side of the sub-project. It is possible to carry the construction materials on this road to the construction site.
Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:
Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.
Possible location of labor camps:
Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.
Requirement and type of raw materials (e.g. sand, stone, wood, etc.):
i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes viii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and ix) clay are the most common type of building material used in construction.
Identification of access road for transportation (Yes/No):
20ft. HBB road is passing on the west side of the sub-project. It is possible to carry the construction materials on this road to the construction site.
Location identification for raw material storage:
Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with CiC authority.
Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from

old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase
Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 200 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period.

Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

Around 3336 sq. feet land is required for the sub-project establishment.

There is reasonable vegetation around the sup-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No pre-existing drainage channel is found. Though a marshy land is found outside of the construction area, but will not be affected because of having a fair distance from the construction site and the adoption of proper construction site management practices.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by

induced development: (High/Medium/Low with description)

Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase
Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

Low. The proposed multipurpose community and service center will be equipped with full facilities for conducting multipurpose services to targeted people, including separate toilets (sanitary) for male and female persons, water supply and filtration, storage and other facilities. No fecal sludge

will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be produced in a typical day and higher amount of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC authority should be made aware of this separation and disposal procedure.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

During the operation phase, this Multipurpose community and Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There is no protected area in or around the project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

The proposed site is located inside the camp area. A HBB road connects the sites with main road. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc. therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because



of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. - All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of students, children, animals, etc.)	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC. - Proper covering of dust producing materials with polythene sheet, - Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. - Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is low	- Water spraying at the demolition site - Fencing / Installing barriers should be shield from dust and aggregates - Avoid usage of machines/equipment with extra noise; - Do not accumulate and burn waste at the site - Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders - It needs to Identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies - Make mandatory the use of safety gears (helmets, safety belts, masks, gloves and boot) by workers depending on nature of work. - Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor	Under the sub-project intervention, the overall score is low.	- Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity;	Prior to the start of Constructi on works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	quality drinking water)		- Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times.		Waste disposal record.	
	Accidents	Under the sub-project intervention, the overall score is low.	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. - Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc. should be available in the site during construction period.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score is low.	- Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage. - Involve the community in planning the work program so that any particularly noisy or otherwise invasive activities can be scheduled to avoid sensitive times. - Avoid using of construction equipment producing excessive noise at school time & at night. - Ear protection devices for the workers & site staffs should be available in site during construction period.	Contractor, environmental specialist of D&SC	Number of complaints from stakeholders, Use of silencers in noise producing equipment and sound barriers, Noise Level following decibel meter (dB)	Daily
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific	Under the sub-project intervention, the overall score is low.	- Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. - Use tarpaulins to cover soils, sand and other loose material when transported by trucks. - Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free. - Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). - Limiting speed of construction vehicles in work	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	within a relatively small area and reversible by mitigation measures.		sites to maximum of 20 km/h. Regular monitoring of air quality.		control devices, Maintain records	
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	- Prohibit employees from cutting of trees for firewood. - If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. - Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	- Prevent excessive noise; - Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); - No fires permitted on site except if needed for the construction works; - Staff must be trained up for operating equipment, - Availability and access to first-aid equipment and medical supplies. - Ensure the presence and use of safety gear at site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets,	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at project location;	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Uniforms etc., - Ensure adequate supply of drinking water. - Sanitation facilities for male & female workers separately.			
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - All affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; - All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; - The contractor must arrange the cancellation of all temporary services;	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works
	Odor& waste disposal	Under the issue the overall score is low.	Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and PMU	Complaints from communities	Site inspection daily / weekly basis.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Vegetation	Under the issue the overall score is low.	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions;	Over the completion of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turfing, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required. Mention some recommendation on E&S assessment ESMP*

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.



Appendix-2

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Construction of 22 Multipurpose Service Center Steel Frame Building (LGED/EMCRP-W4): MPSC of Rohingya Camp-4, Block-F

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of	Selected site will be far away from any water bodies or	PIU & Contractor	Environmental Consultant of PIU,



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	natural drainage	natural flow path to avoid the flash flood or any kind or surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.		PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	- Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. - It will be ensured that proper training and guidance are provided on general and occupational health and safety to Contractors' personnel and labors forces, and records of	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		training sessions are to be kept on site. All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. - Adequate facilities ensuring sanitation for labor camps will	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		be put in place. - Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labour forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared time to time for all types of work activities on site. - Proper walkways will be prepared for students and teachers in existing school boundary. - Proper Signpost at any slippery areas will be ensured in construction site.	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. - Adequate quantities of drinking water will be available at all		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Maintenance of assets, properties and	Periodic maintenance of building structures, plumbing, water filtering and electric equipment has to be carried out.	The party CiC find fit	UNO, Upazila Chairman of Upazila



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	equipment	- Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.		Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization works:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.



- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.
- Kitchen space disassembling must be treated with same level of accuracy and caution.
- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.



For wastes generated from construction and demobilization debris:

- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.
- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.
- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site.
- Burning of any type of wastes in the construction site shall be prohibited completely.

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Appendix-3

Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

SI no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 20,000	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles	LS	LS @ Tk 30,000	30,000
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	2 nos.	@10,000 each	20,000
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as	2 no.	LS @ Tk. 30,000	60,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.			
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. The Safeguard personnel will take duty for 11 sites, so one-eleventh of the personnel cost is counted here.	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months (1/11 one site). (Net payment excluding Tax & VAT)	57,272.73
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73

**Cost of H&S Measures under COVID 19 Situations**

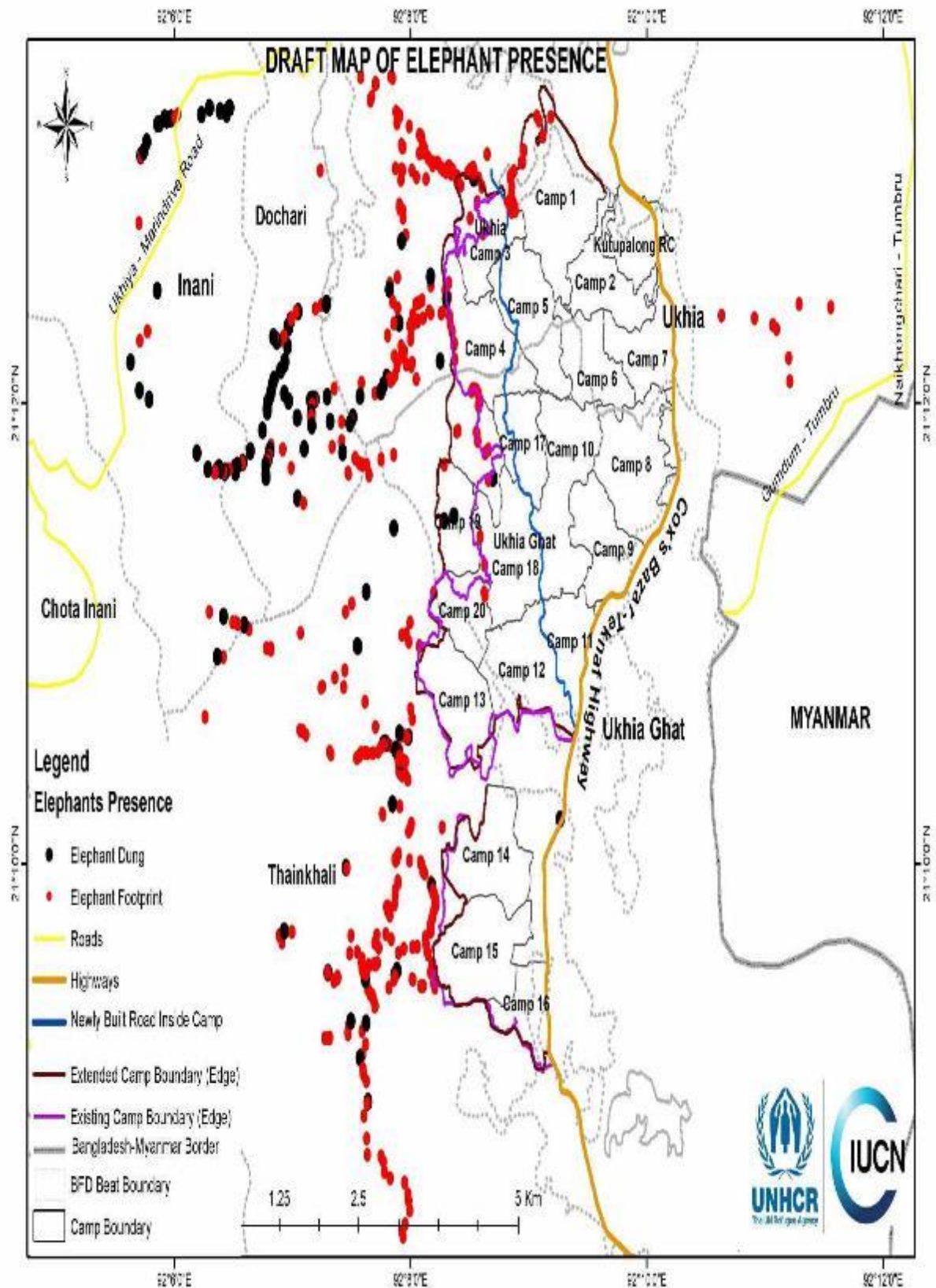
Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No.	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for Refill)	2 bottles and 1 Can for each site	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site



Sl. No.	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						165,125.00	

Appendix-4



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

5

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)
জরুরী ভিত্তিতে রোহিঙ্গা সংকট মোকাবেলায় মান্টি সেক্টর প্রকল্প
Local Government Engineering Department (LGED)
Public Consultation Participants List
Focus Group Discussion

সময় : ১১:৪০ am তারিখ : ১৭.০৩.২০২০

উপ-প্রকল্প/কমপোনেন্ট এর নাম : MPSC - Camp-4, Block-F

মত বিনিময় স্থান : Camp-4, Block-F হোমেন্ড মোকামে মতামত

ইউনিয়ন : বামুন্ডা ইউনিয়ন ওয়ার্ড নং : ডাকঘর : বামুন্ডা উপজেলা : জেলা : কক্সবাজার

সাব প্রকল্প নং : EMCRP/W-4

অংশগ্রহণকারীদের হাজিরা (পরিচয় ও স্বাক্ষর)

ক্রম নং	নাম	বয়স	পুরুষ/নারী	গ্রাম	স্বাক্ষর / টিপসই
১	মোঃ মোস্তফা	২৫	পুরুষ	Camp-4	মোস্তফা
২	হেফোন	২৭	৫	৫	হেফোন
৩	ইমরুল হোসেন	৩০	৫	৫	ইমরুল
৪	চন্দ্র মোল্লী	২২	৫	৫	মোস্তফা
৫	মোস্তফা হোসেন	২৫	৫	৫	মোস্তফা হোসেন
৬	মোস্তফা হোসেন	৩২	৫	৫	মোস্তফা হোসেন
৭	মোস্তফা হোসেন	৪৭	৫	৫	মোস্তফা
৮	মোস্তফা হোসেন	৪০	৫	৫	মোস্তফা
৯	মোস্তফা হোসেন	২২	৫	৫	মোস্তফা হোসেন
১০	মোস্তফা হোসেন	২৫	৫	৫	মোস্তফা
১১	ইমরুল	২০	৫	৫	ইমরুল
১২	মোঃ মোস্তফা	২২	৫	৫	মোস্তফা

Public consultation participant list



Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762

IDA Credit No. 5561-BD



ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-5,
Block-E, Type-2

Union: Palongkhali; Upazila: Ukhiya

District: Cox's Bazar

Funded by:



Government of the People's Republic of Bangladesh & World Bank

Design and Supervision Consultancy:



Development Design Consultants Ltd.

March 2021

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department

MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank



1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Community and Service Centers are to offer the facilities which will improve the availability.

These Multipurpose Community and Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which are identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multipurpose Community and Service Center (MPSC) will be constructed under Palongkhali union in Rohingya camp number 5, Block E of Ukhiya Upazila under Cox's Bazar district. The catchment area of the subproject comprises the surrounding area of Rohingya camp 5. Typical camp settlement settings of the area are no exception than other camp

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya Camp-5, Block-E
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
Owner of land	Government
Land Available (sq.ft.)	5000
Structural Design Option	Type-2 (Rectangular Steel Frame 2-story building (90 feet x 41 feet 7 inches)
Catchment area	Camp-5
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	There is no direct route to connect the facility since it is inside camp location.
Land acquisition	Not required
Current land condition	Partly vacant, a settlement found which is under UNHCR

[D&SC and Field survey, 2021]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-5; Block-E		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3336
Number of Floors	2	3336X2
Number of Class room (sq. feet)	3	each@ 14'-11" X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.

1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-5, Block-E of Ukhiya Upazila in Cox's Bazar District. The site location is relatively a low plain land. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Community and Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
GPS position	21.200872 N and 92.147667 E
Distance from Upazila HQ	13 km
Nearby major road	Army road
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2021]

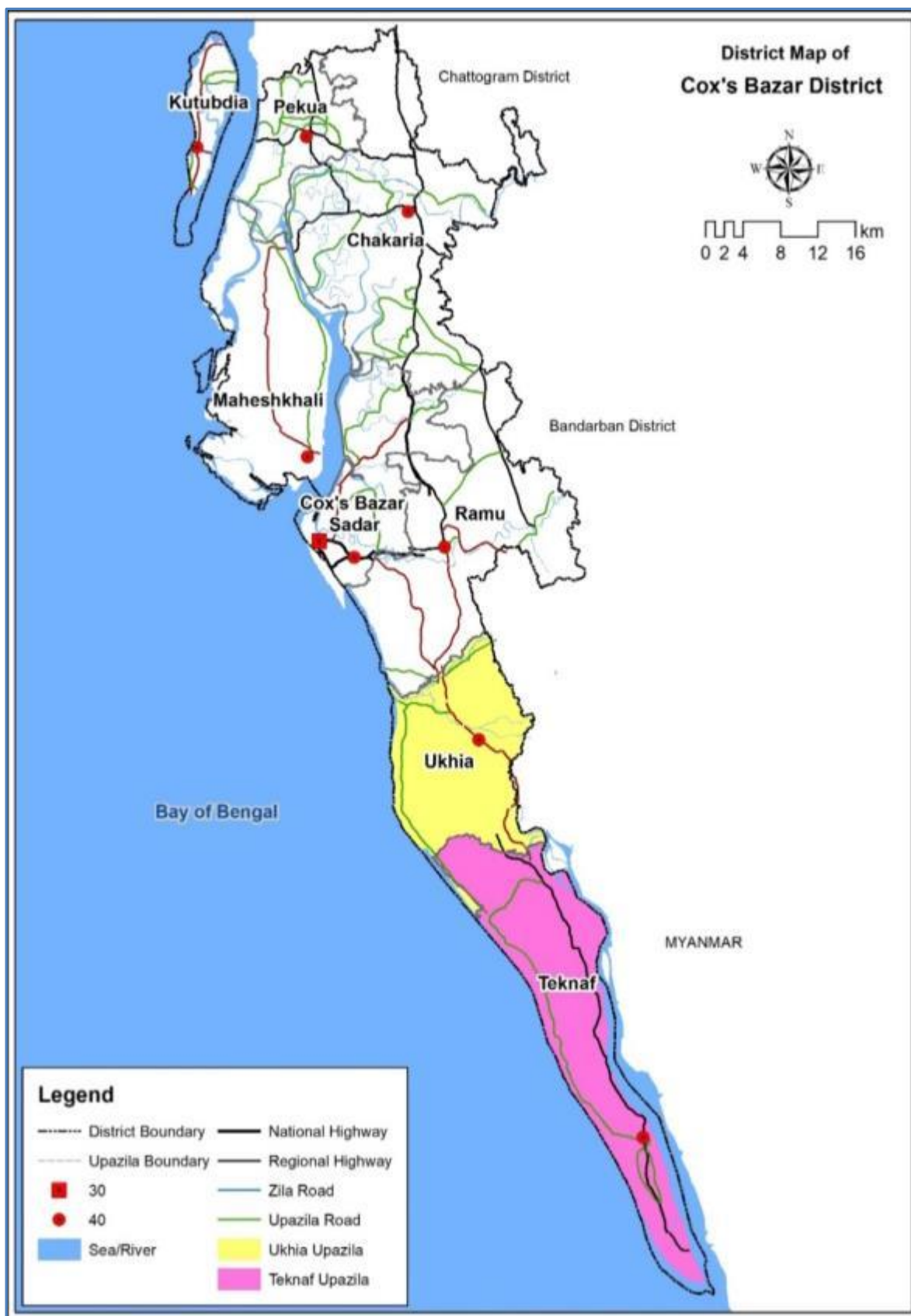


Figure 1.3.1: District Map with project location

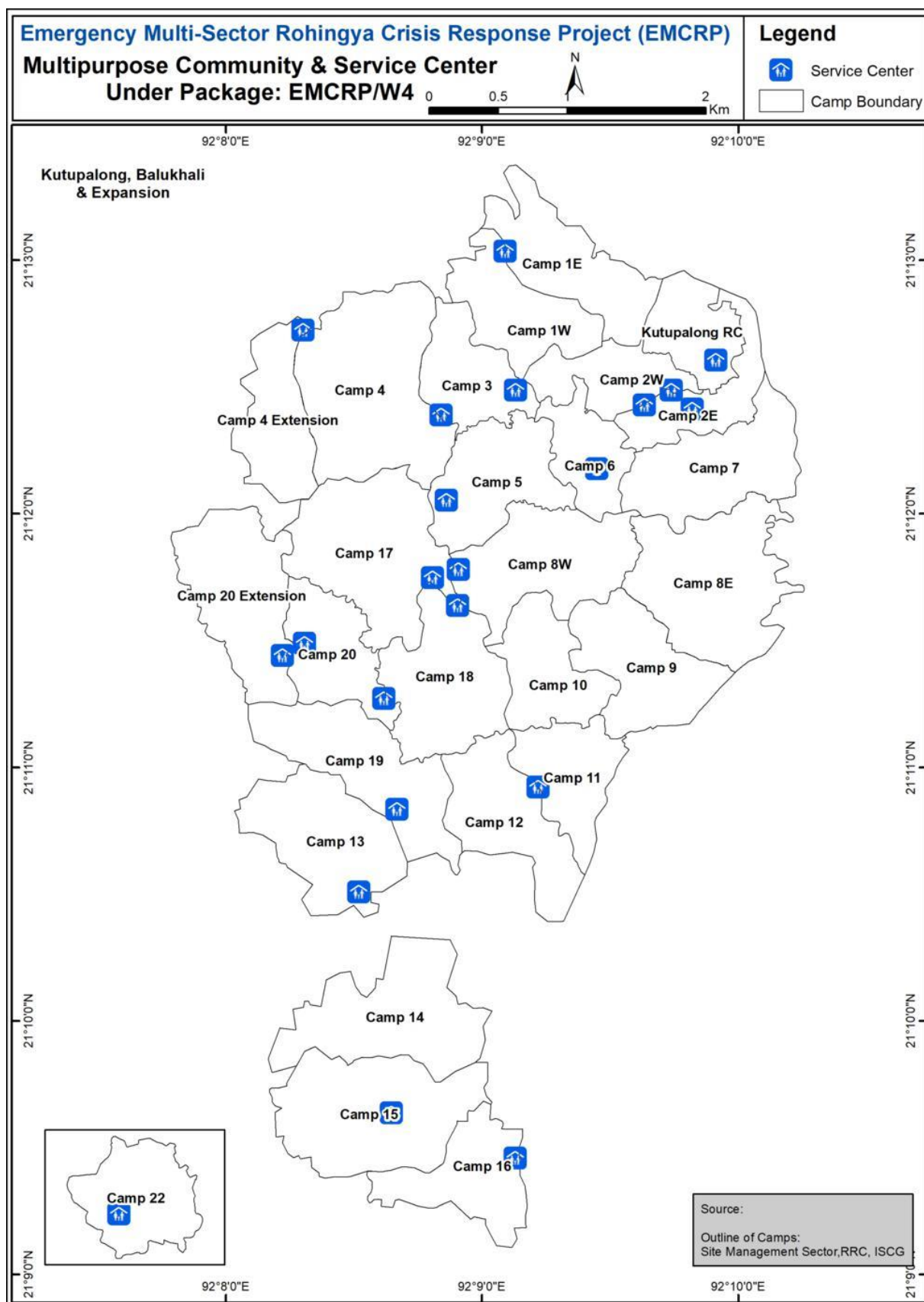


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)

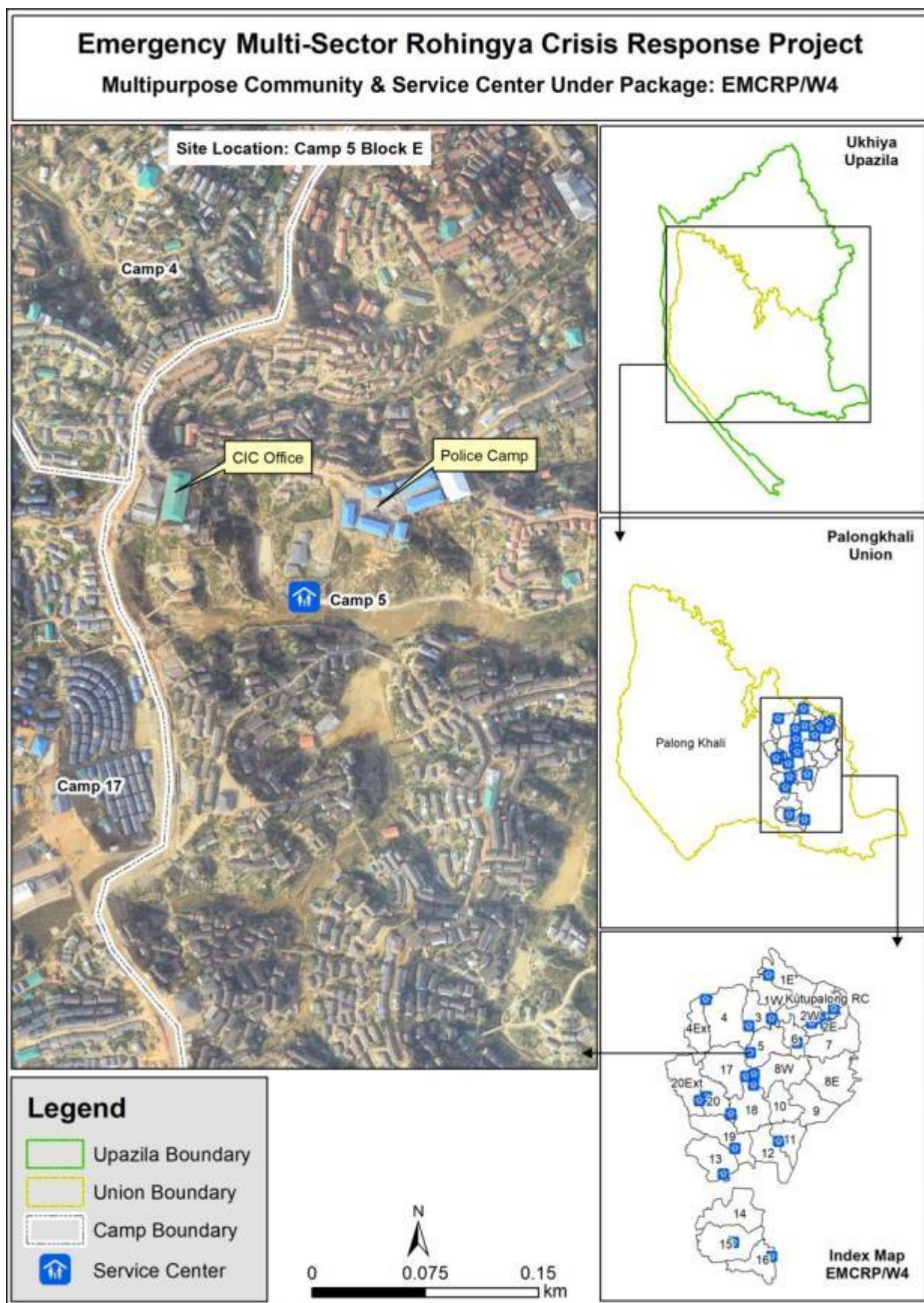


Figure 1.3.3: Union Map with Sub-project location in Camp area

1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	CiC office (100m), DPHE pump house (10m)
South side	DRP settlements (50m), homestead garden (20m)
East side	NGO Forum office (50m), Mini FSM (30m)
West side	DRP settlements on uplands (50m), NGO Forum training facility for women (30m)

[Sources of data: D&SC Field survey, 2021]



Figure 1.4.1: Present condition of the Sub-project area



Figure 1.4.2: Proposed location of MPSC construction

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 09 February 2021 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 12 persons, and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location in particular has no major complications and is in relevance with the CiC office authority currently. Present Camp in Charge (CiC) has suggested to start the development works as early as possible.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Rohingya Camp 5; Block-E and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Figure 2.1.1: Public Consultation Meeting in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people considered that the selected site is suitable for the construction of Multipurpose service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.
- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.
- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.

- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment. Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 09 February 2021 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected sited allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. On the north side of the sub project CiC office (100m), DPHE pump house (10m); on the south side of the sub-project area DRP settlements (50m), homestead garden (20m); on the east side NGO Forum office (50m), Mini FSM (30m) and on the west side DRP settlements on uplands (50m), NGO Forum training facility for women (30m). Few disturbances to some of these establishments/features is anticipated due to construction activities for the case of not being in a sufficient distance from the construction site which is why safety measures such as, strict

construction site management system- including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials et cetera should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from pilling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from pilling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routs and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the mitigation options, different initiatives have been undertaken, such as formation and capacity development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones,

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree planation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones have been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tubewell in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose Community and Service Center will be constructed on a high land where some matured vegetation is found. Due to the construction activities of this Sub-project, trees (small and medium size) will not be cut down and as well as 10 nos. of trees will be planted in the target location. Further, some settlements on the sub-project area might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall effects for this proposed construction works are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.
- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.
- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures

are being realized over time. A comprehensive monitoring framework is suggested in Project ESMF and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguards specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.
- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.

Appendix-1**Environmental Screening Form**

Sub-Project Description Form: (MPSC of Rohingya Camp-5, Block-E)

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Ukhiya

Union: Palongkhali

Name of Community/Local Area: Palongkhali, Rohingya Camp-5.

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose community and Service Center Steel Frame 2-story building will be constructed within target location.

Estimated footprint / land area for this sub-project is 5,000 sq. feet

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.): Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified location on Rohingya camp 5, Block E area. On the north side of the sub project CiC office (100m), DPHE pump house (10m); on the south side of the sub-project area DRP settlements (50m), homestead garden (20m); on the east side NGO Forum office (50m), Mini FSM (30m) and on the west side DRP settlements on uplands (50m), NGO Forum training facility for women (30m). Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any



adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to construction of a new building on the place. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic. Human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified. On the north side of the sub project CiC office (100m), DPHE pump house (10m); on the south side of the sub-project area DRP settlements (50m), homestead garden (20m); on the east side NGO Forum office (50m), Mini FSM (30m) and on the west side DRP settlements on uplands (50m), NGO Forum training facility for women (30m) are present on the surrounding target area.

Some degree of disturbance is anticipated due to construction activities to those components since they are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration route were nearly 1.5 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 02. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

Sub-project Location:

The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district. The sub-project area is located at 21.200872 N and 92.147667 E. The distance from the Upazila headquarter is about 13 km. Nearby major road is Army road which is connect with main road.

**Land ownership**

Land is owned by Government.

Expected construction period: 18 (Eighteen months)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

Project intervention area is partly found to be an open space, but influence area should consider nearly half a kilometer radius around the proposed site. There is a bamboo shaft settlement of UNHCR located on the north side.

On the north side of the sub project CiC office (100m), DPHE pump house (10m); on the south side of the sub-project area DRP settlements (50m), homestead garden (20m); on the east side NGO Forum office (50m), Mini FSM (30m) and on the west side DRP settlements on uplands (50m), NGO Forum training facility for women (30m) but there is no chance to disturbance during this construction activity.

But there is no scope to be affected by the construction activities. No structures, trees and livelihood will be affected by this construction activity. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby.

Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

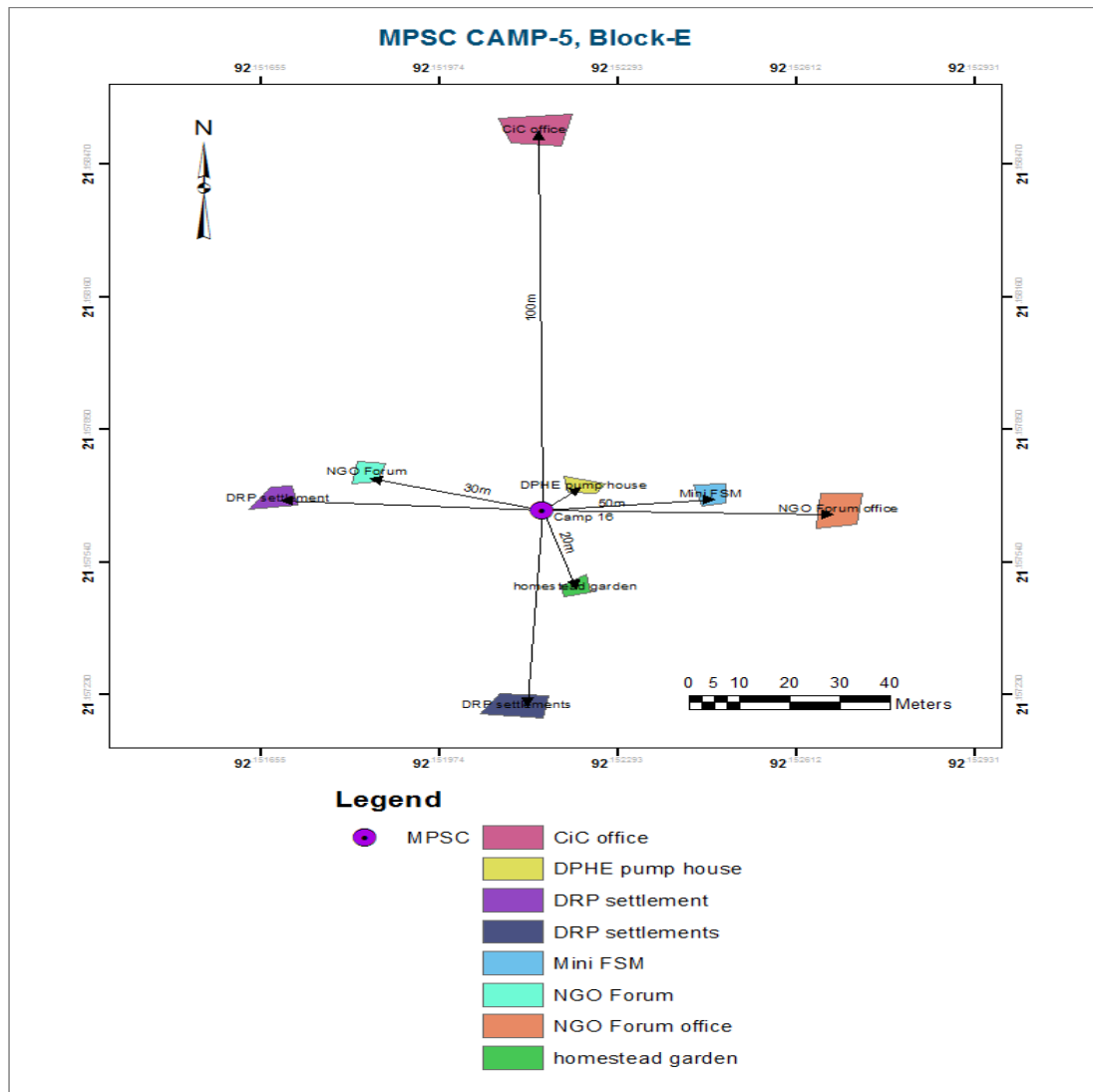
Section B: Environmental Screening**B.1: Environmental feature of sub-project location**

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

On the north side of the sub project CiC office (100m), DPHE pump house (10m); on the south side of the sub-project area DRP settlements (50m), homestead garden (20m); on the east side NGO Forum office (50m), Mini FSM (30m) and on the west side DRP settlements on uplands (50m), NGO Forum training facility for women (30m).

There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.



Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. It will not be affected by the construction works, as the activities will be carried out within the existing camp boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

(1) Within/near Elephant Migration Routes Yes/No*

There is no existence of Elephant corridor/ route now, which have been checked on the basis of elephant migration route map established by UNHCR/IUCN (latest updated maps as of 22 February 2018 and later June 05, 2018).

(2) potential impacts on remaining forests in/around camps Yes/No

N/A (This activity will be ensured in DRP community and within existing camp boundary)

(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:
Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation):

N/A (the sub-project will be constructed in a plain land and within an identified camp boundary)

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 750 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2021). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

**State of forestation:**

Patches of vegetation containing large and matured trees on all edges of the proposed subproject area are located within 200m radial distance.

Summary of water balance analysis (For water supply scheme only):

N/A

B.2: Pre construction Phase**Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable):**

20ft. HBB Army road is passing on the north side of the sub-project. It is possible to carry the construction materials on this road to the construction site.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:

Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.

Possible location of labor camps:

Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.

Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes viii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and ix) clay are the most common type of building material used in construction.

Identification of access road for transportation (Yes/No):

20ft. HBB Army road is passing on the south side of the sub-project. It is possible to carry the construction materials on this road to the construction site.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with CiC authority.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly

composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 200 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period.

Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

Around 3753 sq. feet land is required for the sub-project establishment.

There is reasonable vegetation around the sub-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No pre-existing drainage channel is found. Though a marshy land is found outside of the construction area, but will not be affected because of having a fair distance from the construction site and the adoption of proper construction site management practices.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)



Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

Low. The proposed multipurpose community and service center will be equipped with full facilities for conducting multipurpose services to targeted people, including separate toilets (sanitary) for male and female persons, water supply and filtration, storage and other facilities. No fecal sludge will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be

produced in a typical day and higher amount of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC authority should be made aware of this separation and disposal procedure.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

During the operation phase, this Multipurpose Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There is no protected area in or around the project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

The proposed site is located inside the camp area. A HBB road connects the sites with main road. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc. therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because



of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere.	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. - Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	students, children, animals, etc.)		• Proper covering of dust producing materials with polythene sheet, • Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. • Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is low	• Water spraying at the demolition site • Fencing / Installing barriers should be shield from dust and aggregates • Avoid usage of machines/equipment with extra noise; • Do not accumulate and burn waste at the site • Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders • It needs to Identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- Make mandatory the use of safety gears (helmets, safety belts, masks, gloves and boot) by workers depending on nature of work. - Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.			
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	Under the sub-project intervention, the overall score is low.	- Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. - Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. - Provision of waste bins/ cans, where	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity; Waste disposal record.	Prior to the start of Construction works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times.			
	Accidents	Under the sub-project intervention, the overall score is low.	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. - Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc. should be available in the site during construction period.	Contractor, environment al specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score is low.	- Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage. - Involve the community in planning the work	Contractor, environment al specialist of D&SC	Number of complaints from stakeholders, Use of silencers	Daily



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			program so that any particularly noisy or otherwise invasive activities can be scheduled to avoid sensitive times. • Avoid using of construction equipment producing excessive noise at school time & at night. • Ear protection devices for the workers & site staffs should be available in site during construction period.		in noise producing equipment and sound barriers, Noise Level following decibel meter (dB)	
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation	Under the sub-project intervention, the overall score is low.	• Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. • Use tarpaulins to cover soils, sand and other loose material when transported by trucks. • Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free. • Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). • Limiting speed of construction vehicles in work sites to maximum of 20 km/h.	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution control devices, Maintain	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	measures.		Regular monitoring of air quality.		records	
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	- Prohibit employees from cutting of trees for firewood. - If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. - Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	- Prevent excessive noise; - Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); - No fires permitted on site except if needed for the construction works; - Staff must be trained up for operating equipment, - Availability and access to first-aid equipment and medical supplies. - Ensure the presence and use of safety gear at site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets,	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at project location;	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Uniforms etc., • Ensure adequate supply of drinking water. • Sanitation facilities for male & female workers separately.			
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	• Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; • All affected structures rehabilitated/compensated; • The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; • All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; • The contractor must arrange the cancellation of all temporary services.	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works
	Odor& waste disposal	Under the issue the overall score is low.	• Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and PMU	Complaints from communities	Site inspection daily / weekly basis.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Vegetation	Under the issue the overall score is low.	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions;	Over the completion of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turfing, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required.* Mention some recommendation on E&S assessment ESMP

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.



Appendix-2

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Construction of 22 Multipurpose Service Center Steel Frame Building (LGED/EMCRP-W4): MPSC of Rohingya Camp-5, Block-E

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of	Selected site will be far away from any water bodies or	PIU & Contractor	Environmental Consultant of PIU,



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	natural drainage	natural flow path to avoid the flash flood or any kind or surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.		PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	- Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. - It will be ensured that proper training and guidance are provided on general and occupational health and safety to Contractors' personnel and labors forces, and records of	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		training sessions are to be kept on site. All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. - Adequate facilities ensuring sanitation for labor camps will	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		be put in place. - Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labour forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared time to time for all types of work activities on site. - Proper walkways will be prepared for students and teachers in existing school boundary. - Proper Signpost at any slippery areas will be ensured in construction site.	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. - Adequate quantities of drinking water will be available at all		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Maintenance of assets, properties and	Periodic maintenance of building structures, plumbing, water filtering and electric equipment has to be carried out.	The party CiC find fit	UNO, Upazila Chairman of Upazila



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	equipment	- Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.		Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization works:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.



- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.
- Kitchen space disassembling must be treated with same level of accuracy and caution.
- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.



For wastes generated from construction and demobilization debris:

- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.
- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.
- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site.
- Burning of any type of wastes in the construction site shall be prohibited completely.

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Appendix-3

Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 20,000	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles	LS	LS @ Tk 30,000	30,000
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	2 nos.	@10,000 each	20,000
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as	2 no.	LS @ Tk. 30,000	60,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.			
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. The Safeguard personnel will take duty for 11 sites, so one-eleventh of the personnel cost is counted here.	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months (1/11 one site). (Net payment excluding Tax & VAT)	57,272.73
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73

**Cost of H&S Measures under COVID 19 Situations**

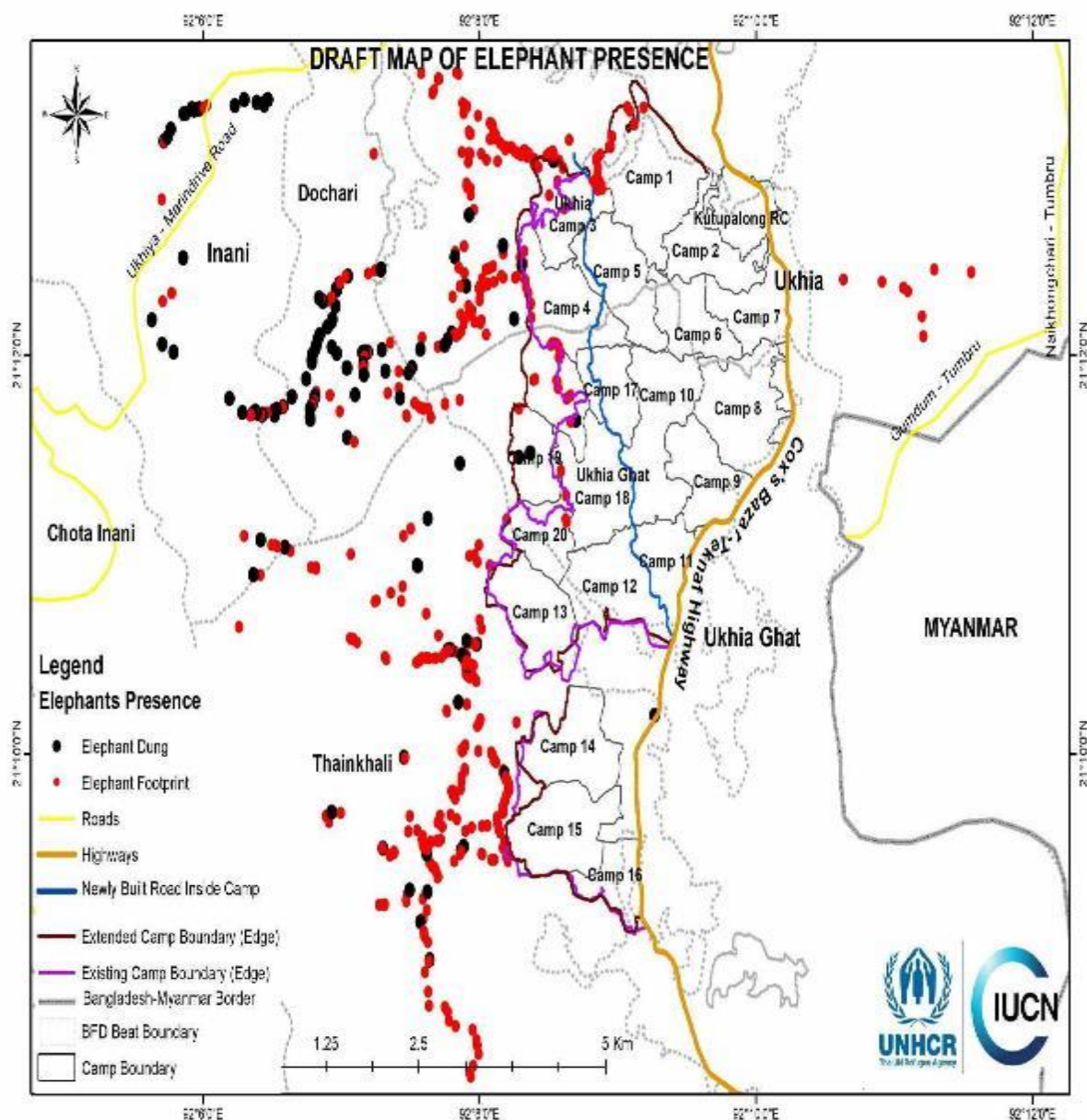
Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No.	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for Refill)	2 bottles and 1 Can for each site	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office



Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						165,125.00	

Appendix-4



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)
জরুরী ভিত্তিতে রোহিঙ্গা সংকট মোকাবেলায় মাস্টি সেক্টর প্রকল্প
Local Government Engineering Department (LGED)
Public Consultation Participants List
Focus Group Discussion

সময় : ১১:৪০ তারিখ : ০৯.০২.২৩

উপ-প্রকল্প/কমপোনেন্ট এর নাম : MPSC - Camp - 5, Block - E

মত বিনিময় স্থান : Camp - 5, Block - E site management office.

ইচ্ছানিয়ন : কাক্স/পাটনো জম্মা নং : ০৯ ডাকঘর : বাগুয়ারী উপজেলা : পটুয়াখালী জেলা : কক্সবাজার

সাব প্রকল্প নং : EMCRP/W-4

অংশগ্রহণকারীদের হাতিরা (পরিচয় ও স্বাক্ষর)

ক্রম নং	নাম	বয়স	পুরুষ/নারী	গ্রাম	স্বাক্ষর / টিপসাই
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Public consultation participant list



Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762

IDA Credit No. 5561-BD



ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-06, Block-D,
Type-03

Union: Palongkhali; Upazila: Ukhiya
District: Cox's Bazar

Funded by:



Government of the People's Republic of Bangladesh & World Bank

Design and Supervision Consultancy:



Development Design Consultants Ltd.

March 2021

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department

MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank



1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Service Centers are to offer the facilities which will improve the availability.

These Multipurpose Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which are identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multipurpose Community and Service Center (MPSC) will be constructed under Palongkhali union in Rohingya camp number 06 of Ukhiya Upazila under Cox's Bazar district. The catchment area of the subproject comprises the surrounding area of Rohingya camp 06. Typical camp settlement settings of the area are no exception than other camp

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya Camp-06, Block-D
District	Cox's Bazar
Upazila	Ukhiya
Union	Rajapalong
Owner of land	Government
Land Available (sq ft.)	3355
Structural Design Option	Type-03 (Rectangular Steel Frame 2-storey building (80 feet x 41 feet 7 inches)
Catchment area	Camp-06
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	There is a connecting road which connects camp 03 and camp 04
Land acquisition	Not required
Current land condition	The location is found to be an empty space which is residing just on the east of the CiC office.

[D&SC and Field survey, 2021]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-06; Block-D		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3326.64
Number of Floors	2	3326.64X2
Number of Class room (sq. feet)	3	each@ 11'-7" X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.

1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-06, Block-D of Ukhiya Upazila in Cox's Bazar District. The site location is relatively a high plain land and accessible through vehicles as of 10ft wide HBB road is present near the site which connects camp 03 and camp 04. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Ukhiya
Union	Rajapalong
GPS position	21.20299°N and 92.15752°E
Distance from Upazila HQ	7.5 km
Nearby major road	Cox's Bazar- Teknaf highway
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2021]

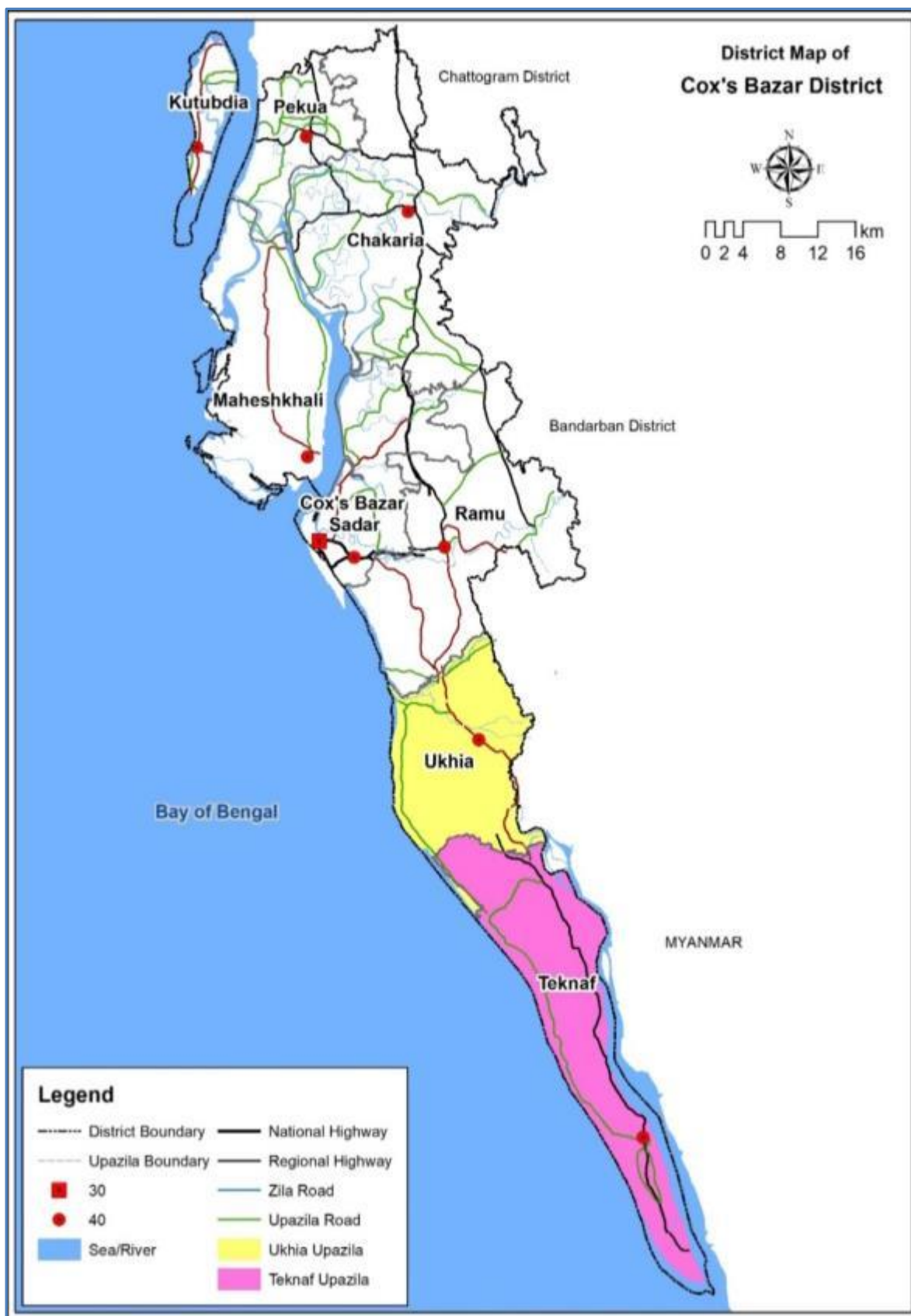


Figure 1.3.1: District Map with project location

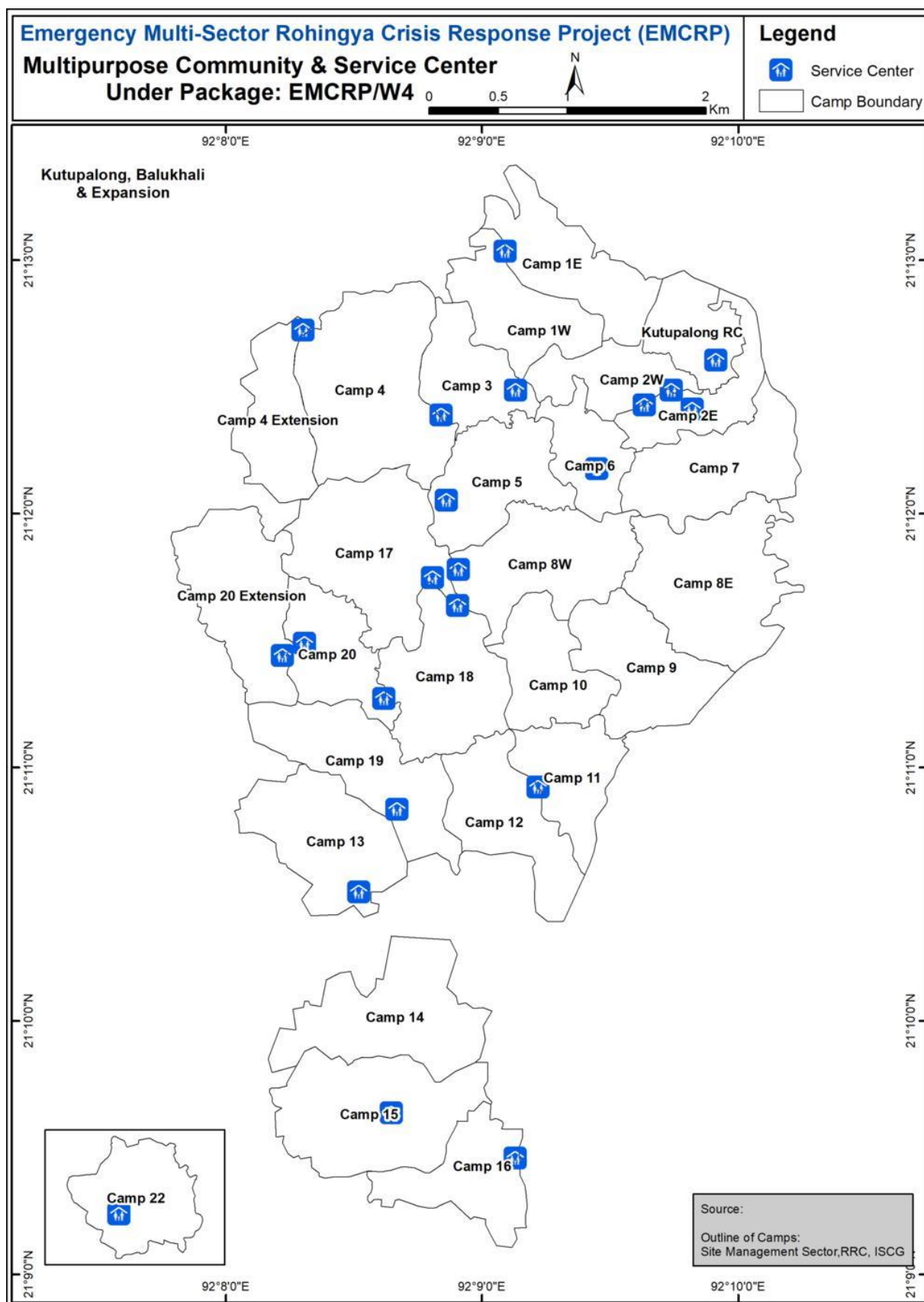


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)

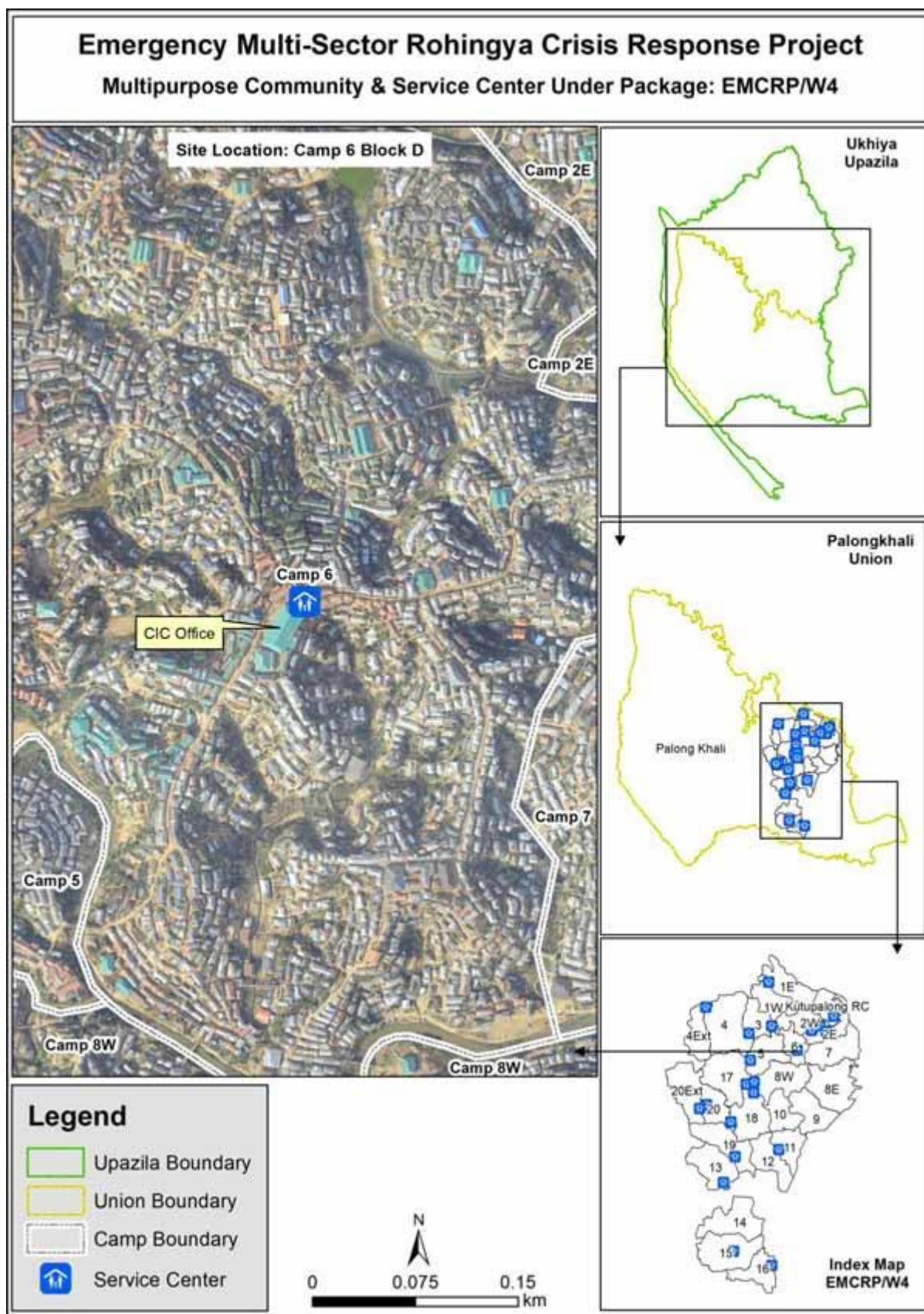


Figure 1.3.3: Union Map with Sub-project location in Camp area

1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	DRP Shelters (30m), DRP Shelter(30m), Temporary Shop(20m)
South side	Mosque (200m), DRP Shelter (30m), JCF School(600m), Mosque(300m)
East side	Mosque (60m)
West side	DRP Settlement(50m), DRP Settlements(25m), CIC Office of camp 06 (10m)

[Sources of data: D&SC Field survey, 2021]



Figure 1.4: Present condition of the Sub-project area

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 08 February 2021 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 11 persons, and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location in particular has no major complications and is in relevance with the CiC office authority currently. Present Camp in Charge has suggested to start the development works as early as possible.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Rohingya Camp 06; Block-D and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Figure 2.1.1: Public Consultation Meeting in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people considered that the selected site is suitable for the construction of Multipurpose service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.
- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.
- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.
- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine

which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 08 February 2021 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected sited allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. On the north side there are DRP Shelters (30m), DRP Shelter(30m), Temporary Shop(20m); on the south side Mosque (200m), DRP Shelter (30m), JCF School(600m), Mosque(300m); on the east side a Mosque (60m) and on the west side DRP Settlement(50m), DRP Settlements(25m), CIC Office of camp 06 (10m). Few disturbances to some of these establishments/features is anticipated due to construction activities for the case of not being in a sufficient distance from the construction site which is why safety measures such as, strict construction site management system- including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials et cetera should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from pilling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from pilling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routs and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the

mitigation options, different initiatives have been undertaken, such as formation and capacity development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones, as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree planation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones has been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tubewell in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose Community and Service Center will be constructed on a high land where some matured vegetation is found. Due to the construction activities of this Sub-project, no trees will be cut down however, few numbers of trees should be planted in the target location. Further, some settlements of sub-project area might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall effects for this proposed construction works are minimized to its

least level and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.

- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.
- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures are being realized over time. A comprehensive monitoring framework is suggested in Project ESMF and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the

environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguards specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the

backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.
- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.

Appendix-1**Environmental Screening Form**

Sub-Project Description Form: (MPSC of Rohingya Camp-6, Block-D)

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Ukhiya

Union: Palongkhali

Name of Community/Local Area: Palongkhali, Rohingya Camp-06

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose community and Service Center Steel Frame 2-storey building will be constructed within target location.

Estimated footprint / land area for this sub-project is 3326.64 sq. feet

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.): Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified location on Rohingya camp area. On the north side there are DRP Shelters (30m), DRP Shelter(30m), Temporary Shop(20m); on the south side Mosque (200m), DRP Shelter (30m), JCF School(600m), Mosque(300m); on the east side a Mosque (60m) and on the west side DRP Settlement(50m), DRP Settlements(25m), CIC Office of camp 06 (10m). Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction of this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any



adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to demolition of an old building and later construction of a new building on the same place. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic. Human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified on the north side there are DRP Shelters (30m), DRP Shelter(30m), Temporary Shop(20m); on the south side Mosque (200m), DRP Shelter (30m), JCF School(600m), Mosque(300m); on the east side a Mosque (60m) and on the west side DRP Settlement(50m), DRP Settlements(25m), CIC Office of camp 06 (10m) are present on the surrounding target area.

Some degree of disturbance is anticipated due to construction activities to those components since they are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration route is present nearly 2 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 03. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

Sub-project Location:

The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district. The sub-project area is located at 21.20299°N and 92.15752° E. The distance from the Upazila

headquarter is about 7.5 km. Nearby major road is Cox's Bazar- Teknaf highway.

Land ownership

Land is owned by Government.

Expected construction period: 18 (Eighteen months)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

Project intervention area is found to be an open space, but influence area should consider nearly half a kilometer radius around the proposed site.

On the north side there are DRP Shelters (30m), DRP Shelter(30m), Temporary Shop(20m); on the south side Mosque (200m), DRP Shelter (30m), JCF School(600m), Mosque(300m); on the east side a Mosque (60m) and on the west side DRP Settlement(50m), DRP Settlements(25m), CIC Office of camp 06 (10m) but there is no chance to disturbance during this construction activity.

But there is no scope to be affected by the construction activities. No structures, trees and livelihood will be affected by this construction activity. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby.

Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

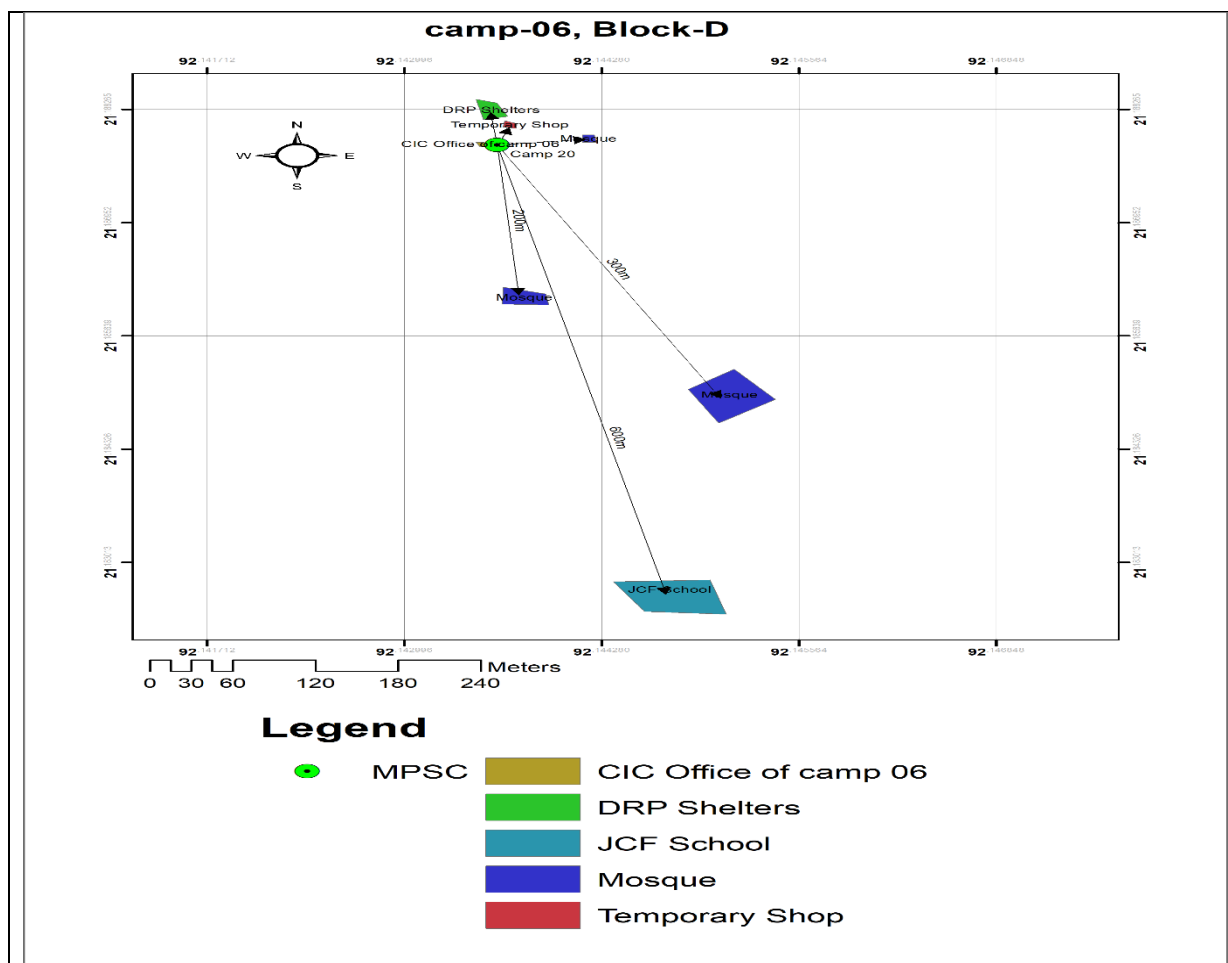
Section B: Environmental Screening

B.1: Environmental feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

On the north side there are DRP Shelters (30m), DRP Shelter(30m), Temporary Shop(20m); on the south side Mosque (200m), DRP Shelter (30m), JCF School(600m), Mosque(300m); on the east side a Mosque (60m) and on the west side DRP Settlement(50m), DRP Settlements(25m), CIC Office of camp 06 (10m). There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.



Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some small bush. Several mosques, madrasa and DRP settlement were found during the survey. Those will not be affected by the construction works, as the activities will be carried out within the existing selected boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

(1) Within/near Elephant Migration Routes Yes/No*

There is no existence of Elephant corridor/ route now, which have been checked on the basis of elephant migration route map established by UNHCR/IUCN (latest updated maps as of 22 February 2018 and later June 05, 2018).

(2) potential impacts on remaining forests in/around camps Yes/No

N/A (This activity will be ensured in DRP community and within existing camp boundary)

(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:

Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation):

N/A (the sub-project will be constructed in a plain land and within an identified camp boundary)

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 800 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2019). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

State of forestation:

Patches of vegetation containing large and matured trees across the road side of the proposed subproject area are located within 200m radial distance.

**Summary of water balance analysis (For water supply scheme only):**

N/A

B.2: Pre construction Phase**Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable):**

A HBB road connecting camp-03 and camp-04 is present on the north of the location. It is possible to carry the construction materials on this road to the construction site.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:

Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.

Possible location of labor camps:

Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.

Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes viii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and ix) clay are the most common type of building material used in construction.

Identification of access road for transportation (Yes/No):

A HBB road connecting camp-03 and camp-04 is present on the north of the location. It is possible to carry the construction materials on this road to the construction site.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with CiC authority.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

**B.3: Construction Phase****Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):**

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 200 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period.

Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

Around 3326.64 sq. feet land is required for the sub-project establishment.

There is reasonable vegetation around the sup-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No pre-existing drainage channel is found. Though a marshy land is found outside of the construction area, but will not be affected because of having a fair distance from the construction site and the adoption of proper construction site management practices.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

Low. The proposed multipurpose community and service center will be equipped with full facilities for conducting multipurpose services to targeted people, including separate toilets (sanitary) for male and female persons, water supply and filtration, storage and other facilities. No fecal sludge will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be produced in a typical day and higher amount of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC authority should be made aware of this separation and disposal procedure.

**Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)**

There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

During the operation phase, this Multipurpose Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There is no protected area in or around the project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

The proposed site is located inside the camp area. A HBB road connects the sites with main road. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc. therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere.	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. - Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of students, children,	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC. - Proper covering of dust producing materials	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	animals, etc.)		with polythene sheet, • Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. • Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is Low	• Water spraying at the demolition site • Fencing / Installing barriers should be shield from dust and aggregates • Avoid usage of machines/equipment with extra noise; • Do not accumulate and burn waste at the site • Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders • It needs to Identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies • Make mandatory the use of safety gears	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			(helmets, safety belts, masks, gloves and boot) by workers depending on nature of work. Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.			
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	Under the sub-project intervention, the overall score is low.	- Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. - Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity; Waste disposal record.	Prior to the start of Construction works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times.			
	Accidents	Under the sub-project intervention, the overall score is low.	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. - Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc. should be available in the site during construction period.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score is low.	- Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage. - Involve the community in planning the work program so that any particularly noisy or otherwise invasive activities can be scheduled	Contractor, environmental specialist of D&SC	Number of complaints from stakeholders, Use of silencers in noise producing	Daily



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			to avoid sensitive times. • Avoid using of construction equipment producing excessive noise at school time & at night. • Ear protection devices for the workers & site staffs should be available in site during construction period.		equipment and sound barriers, Noise Level following decibel meter (dB)	
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.	Under the sub-project intervention, the overall score is low.	• Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. • Use tarpaulins to cover soils, sand and other loose material when transported by trucks. • Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free. • Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). • Limiting speed of construction vehicles in work sites to maximum of 20 km/h. • Regular monitoring of air quality.	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution control devices, Maintain records	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	- Prohibit employees from cutting of trees for firewood. - If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. - Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	- Prevent excessive noise; - Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); - No fires permitted on site except if needed for the construction works; - Staff must be trained up for operating equipment, - Availability and access to first-aid equipment and medical supplies. - Ensure the presence and use of safety gear at site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets, Uniforms etc., - Ensure adequate supply of drinking water. - Sanitation facilities for male & female workers	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at project location;	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			separately.			
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - All affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; - All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; - The contractor must arrange the cancellation of all temporary services;	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works
	Odor& waste disposal	Under the issue the overall score is low.	Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and PMU	Complaints from communities	Site inspection daily / weekly basis.
	Vegetation	Under the issue the overall score is	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in	Contractor monitored by Consultant	Worksite is restored to original	Over the completion



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
		low.	the re-vegetation specification that forms part of the bidding document.	and PMU	conditions;	of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turfing, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required. Mention some recommendation on E&S assessment ESMP*

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.



Appendix-2

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Construction of 22 Multipurpose Community and Service Center Steel Frame Building (LGED/EMCRP-W4): MPSC of Rohingya Camp-06, Block-D

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of	Selected site will be far away from any water bodies or	PIU & Contractor	Environmental Consultant of PIU,



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	natural drainage	natural flow path to avoid the flash flood or any kind or surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.		PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	- Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. - It will be ensured that proper training and guidance are provided on general and occupational health and safety to Contractors' personnel and labors forces, and records of	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		training sessions are to be kept on site. All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. - Adequate facilities ensuring sanitation for labor camps will	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		be put in place. - Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labour forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared time to time for all types of work activities on site. - Proper walkways will be prepared for students and teachers in existing school boundary. - Proper Signpost at any slippery areas will be ensured in construction site.	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. - Adequate quantities of drinking water will be available at all		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Maintenance of assets, properties and	Periodic maintenance of building structures, plumbing, water filtering and electric equipment has to be carried out.	The party CiC find fit	UNO, Upazila Chairman of Upazila



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	equipment	- Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.		Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.
- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.
- Kitchen space disassembling must be treated with same level of accuracy and caution.



- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.

For wastes generated from construction and demobilization debris:

- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.
- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.



- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site;
- Burning of any type of wastes in the construction site shall be prohibited completely.

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Appendix-3

Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 20,000	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles	LS	LS @ Tk 30,000	30,000
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	2 nos.	@10,000 each	20,000
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local	2 no.	LS @ Tk. 30,000	60,000



SI no.	Description of item	Quantity	Unit price	Total amount
	situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.			
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. The Safeguard personnel will take duty for 11 sites, so one-eleventh of the personnel cost is counted here.	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months (1/11 one site). (Net payment excluding Tax & VAT)	57,272.73
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73

**Cost of H&S Measures under COVID 19 Situations**

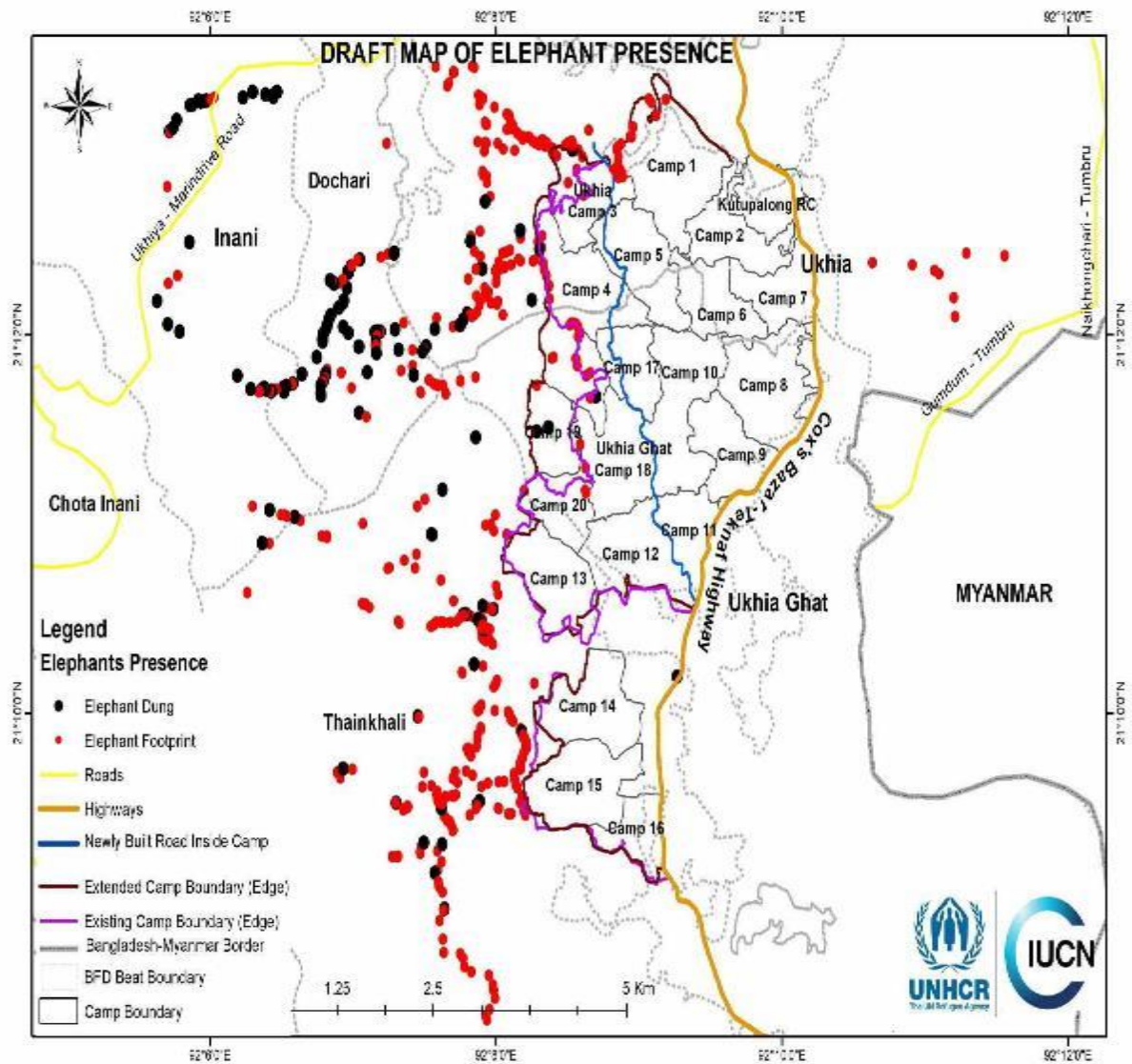
Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for	2 bottles and 1 Can for each	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office



Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
	Refill)	site						
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						165,125.00	

Appendix-4



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)
জরুরী ভিত্তিতে রোহিঙ্গা সংকট মোকাবেলায় মাস্টি সেক্টর প্রকল্প
Local Government Engineering Department (LGED)
Public Consultation Participants List
Focus Group Discussion

সময় : ৪:২০
উপ-প্রকল্প/কমপোনেন্ট এর নাম : MPSC - Camp-06
মত বিনিময় স্থান : ঢাঃ জাতিসংঘ সন্মান
ইউনিয়ন : পটুয়াখালী জয়ান্ত নং : ডাকঘর : উপজেলা : পটুয়াখালী জেলা : কক্সবাজার

সাব প্রকল্প নং :
অংশগ্রহণকারীদের হাজিরা (পরিচয় ও স্বাক্ষর)

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Public consultation participant list



Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762

IDA Credit No. 5561-BD



ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-8W,
Block-F, Type-3
Union: Palongkhali; Upazila: Ukhiya
District: Cox's Bazar

Funded by:



Government of the People's Republic of Bangladesh & World Bank

Design and Supervision Consultancy:



Development Design Consultants Ltd.

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department

MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank



1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Community and Service Centers are to offer the facilities which will improve the availability.

These Multipurpose Community and Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which are identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multipurpose Community and Service Center (MPSC) will be constructed under Palongkhali union in Rohingya camp number 8W, Block F of Ukhiya Upazila under Cox's Bazar district. The catchment area of the subproject comprises the surrounding area of Rohingya camp 8W. Typical camp settlement settings of the area are no exception than other camp

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya Camp-8W, Block-F
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
Owner of land	Government
Land Available (sq.ft.)	4675
Structural Design Option	Type-3 (Rectangular Steel Frame 2-story building (80 feet x 41 feet 7 inches)
Catchment area	Camp-8W
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	There is no direct route to connect the facility since it is inside camp location.
Land acquisition	Not required
Current land condition	The location is an identified open space.

[D&SC and Field survey, 2020]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-8W; Block-F		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3336
Number of Floors	2	3336X2
Number of Class room (sq. feet)	3	each@ 11'-7"X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.



1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-8W, Block-F of Ukhiya Upazila in Cox's Bazar District. The site location is on low ground but not accessible through vehicles as of HBB road is present near the site which does not connect with 20ft. wide Army road. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Community and Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
GPS position	21.196313 N and 92.148454 E
Distance from Upazila HQ	14 km
Nearby major road	Army road which connects with main road
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2020]

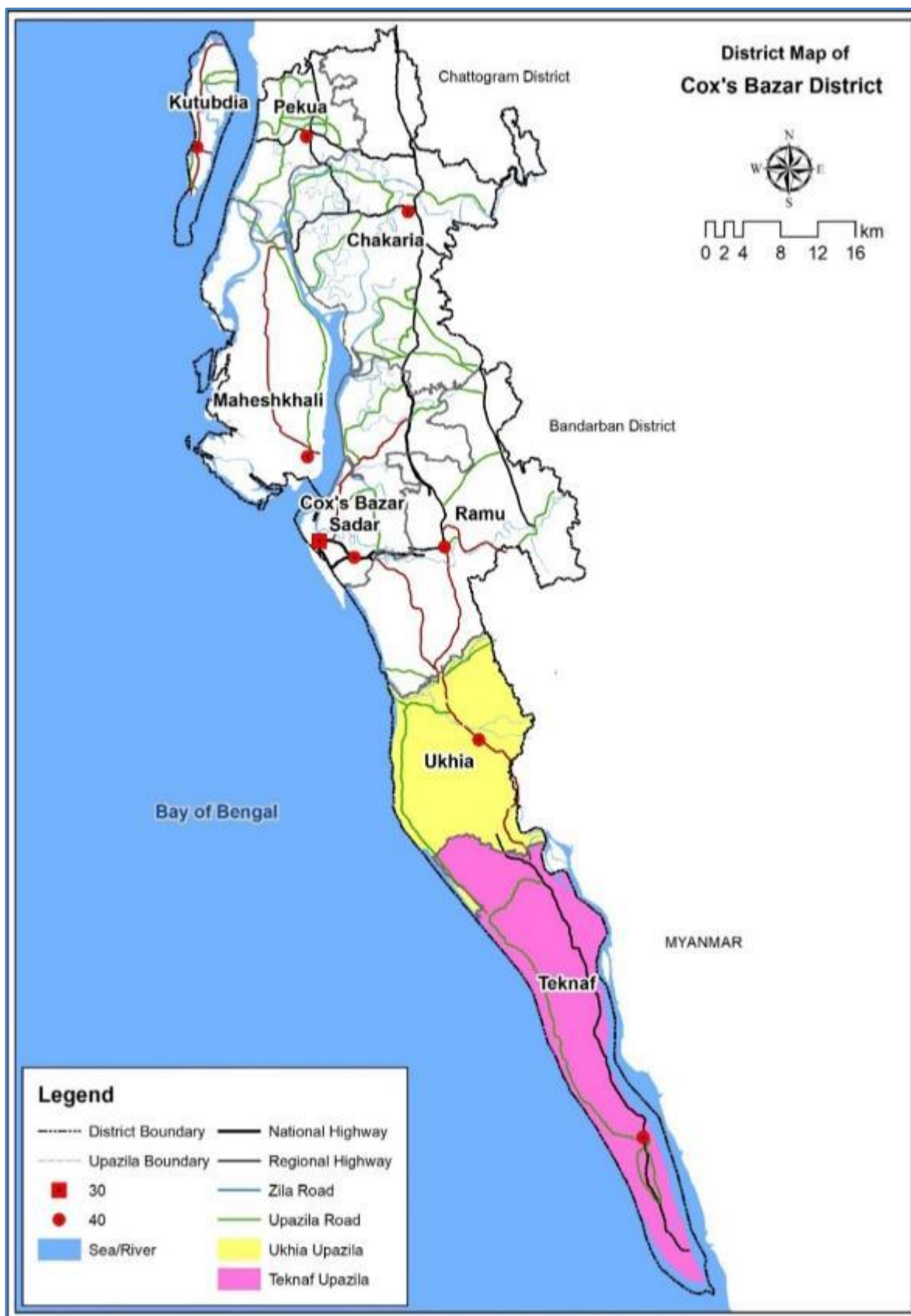


Figure 1.3.1: District Map with project location

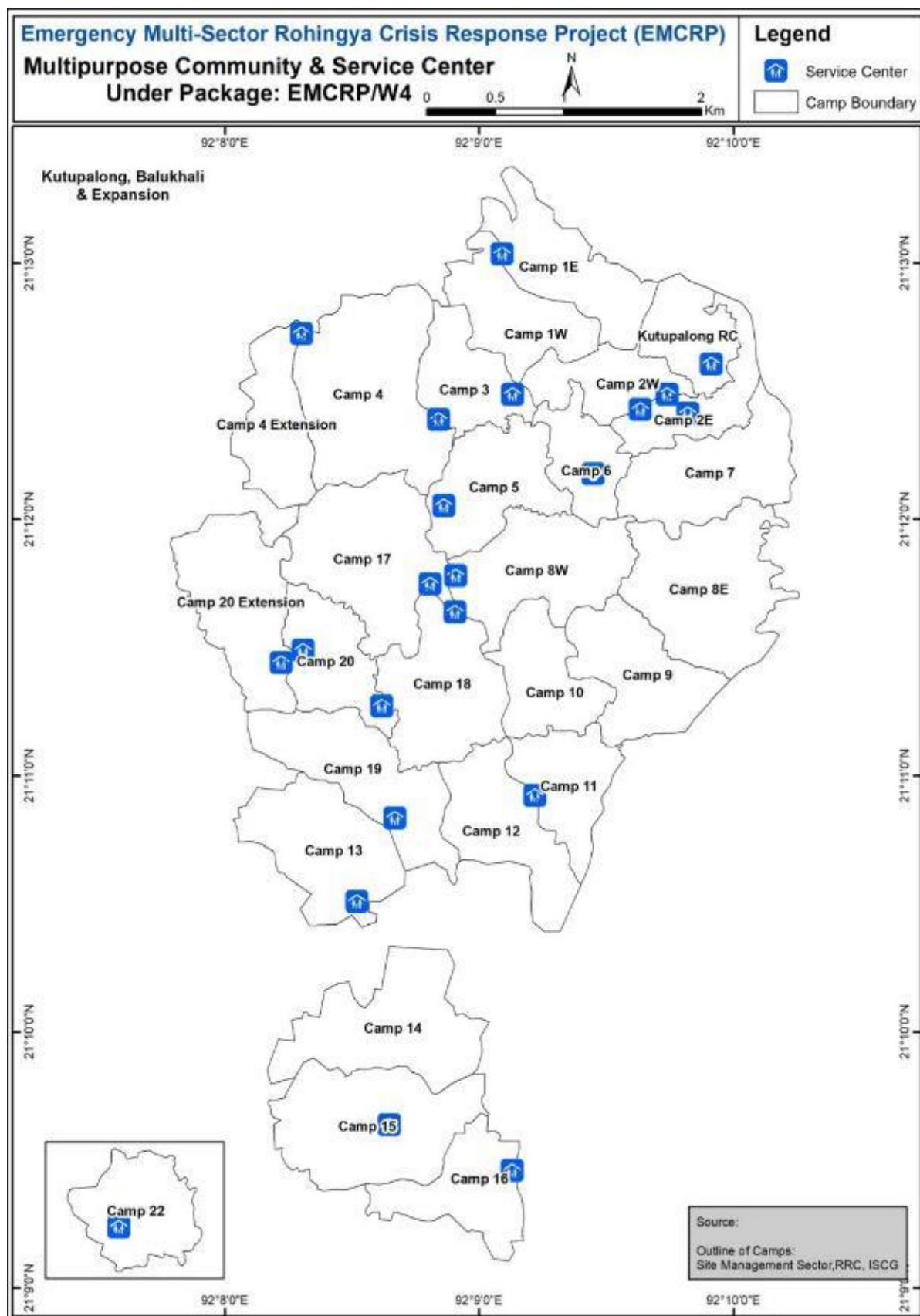


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)

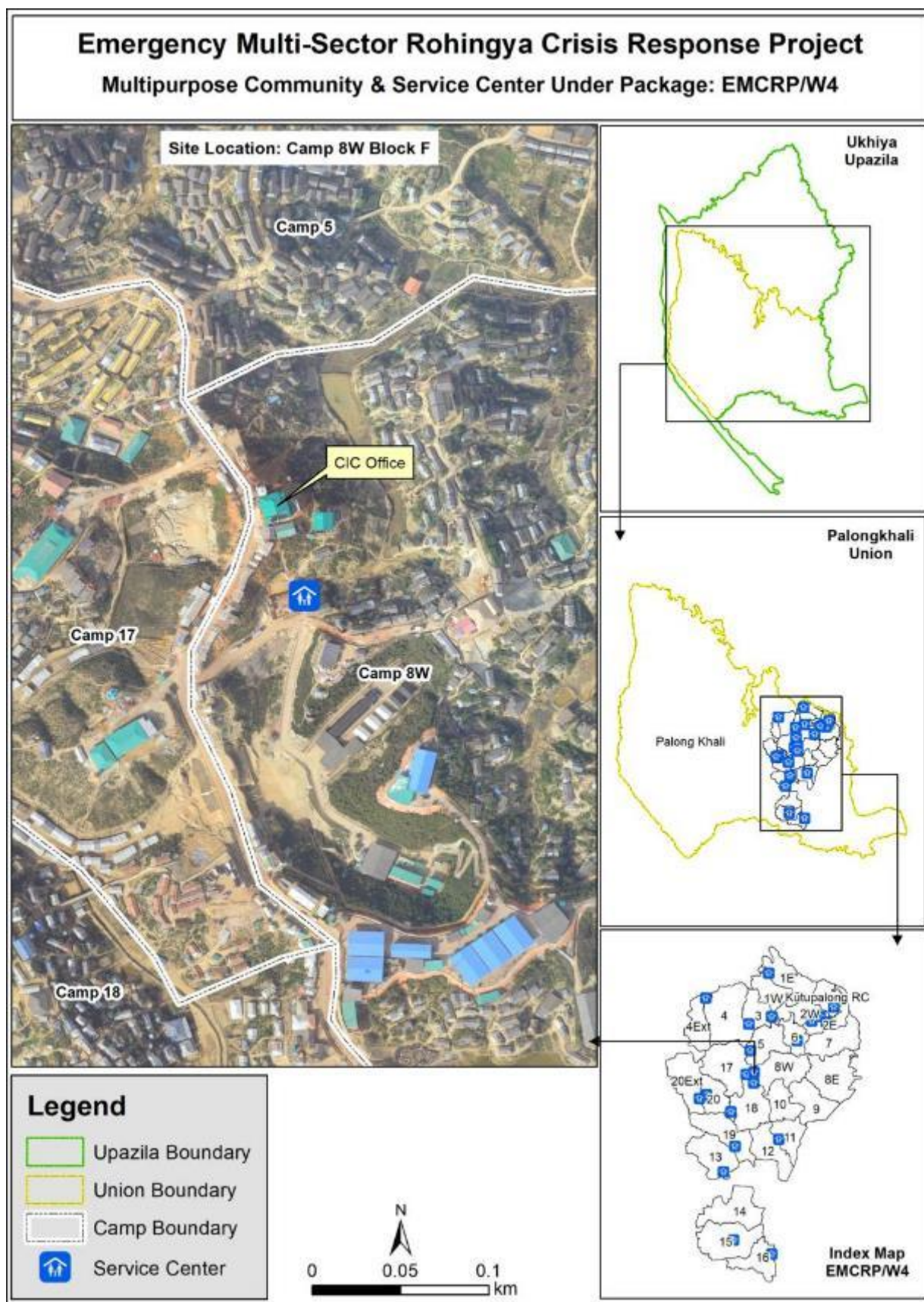


Figure 1.3.3: Union Map with Sub-project location in Camp area

1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	CiC office (50m), LPG distribution office (50m)
South side	MSF Medical center (30m), DRP settlements (80m)
East side	DRP settlements (50m), chorra (30m)
West side	SMEP office (20m)

[Sources of data: D&SC Field survey, 2021]



Figure 1.4.1: Present condition of the Sub-project area



Figure 1.4.2: Proposed location of MPSC construction

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 09 February 2021 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 09 persons, and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location in particular has no major complications and is in relevance with the CiC office authority currently. Present Camp in Charge (CiC) has suggested to start the development works as early as possible.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Rohingya Camp 8W; Block-F and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Figure 2.1.1: Public Consultation Meeting in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people considered that the selected site is suitable for the construction of Multipurpose service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.
- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.
- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.

- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment. Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 09 February 2021 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected sited allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. On the north side of the sub project CiC office (50m), LPG distribution office (50m); on the south side of the sub-project area MSF Medical center (30m), DRP settlements (80m); on the east side DRP settlements (50m), chorra (30m) and on the west side SMEP office (20m). Few disturbance to some of these establishments/features is anticipated due to construction activities for the case of not being in a sufficient distance from the construction site which is why safety measures such as, strict construction site management system- including restrictive work schedule

during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials et cetera should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from piling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from piling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routes and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the mitigation options, different initiatives have been undertaken, such as formation and capacity development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones,

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree planation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones have been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tubewell in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose Community and Service Center will be constructed on a high land where some matured vegetation is found. Due to the construction activities of this Sub-project, trees (small and medium size) will not be cut down and as well as 10 nos. of trees will be planted in the target location. Further, some settlements on the sub-project area might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall effects for this proposed construction works are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.
- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.
- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures

are being realized over time. A comprehensive monitoring framework is suggested in Project ESMF and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguards specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.
- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.

Appendix-1**Environmental Screening Form**

Sub-Project Description Form: (MPSC of Rohingya Camp-8W, Block-F)

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Ukhiya

Union: Palongkhali

Name of Community/Local Area: Palongkhali, Rohingya Camp-8W.

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose community and Service Center Steel Frame 2-story building will be constructed within target location.

Estimated footprint / land area for this sub-project is 4675 sq. feet

Brief description of sub-project site: (e.g., present land use, Important Environmental Features (IEFs) near site, etc.): Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified location on Rohingya camp 8W, Block F area. On the north side of the sub project CiC office (50m), LPG distribution office (50m); on the south side of the sub-project area MSF Medical center (30m), DRP settlements (80m); on the east side DRP settlements (50m), chorra (30m) and on the west side SMEP office (20m). Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any

adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to construction of a new building on the identified place. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic. Human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified. On the north side of the sub project CiC office (50m), LPG distribution office (50m); on the south side of the sub-project area MSF Medical center (30m), DRP settlements (80m); on the east side DRP settlements (50m), chorra (30m) and on the west side SMEP office (20m) are present on the surrounding target area.

Some degree of disturbance is anticipated due to construction activities to those components since they are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration route were nearly 3 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 03. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

Sub-project Location:

The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district. The sub-project area is located at 21.196313 N and 92.148454 E. The distance from the Upazila headquarter is about 14 km. Nearby major road is 20ft. wide Army road which is connect with Cox's Bazar- Teknaf highway.

**Land ownership**

Land is owned by Government.

Expected construction period: 18 (Eighteen months)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

Project intervention area is found to be an open space, but influence area should consider nearly half a kilometer radius around the proposed site. On the north side of the sub project CiC office (50m), LPG distribution office (50m); on the south side of the sub-project area MSF Medical center (30m), DRP settlements (80m); on the east side DRP settlements (50m), chorra (30m) and on the west side SMEP office (20m) but there is no chance to disturbance during this construction activity.

But there is no scope to be affected by the construction activities. No structures, trees and livelihood will be affected by this construction activity. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby.

Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

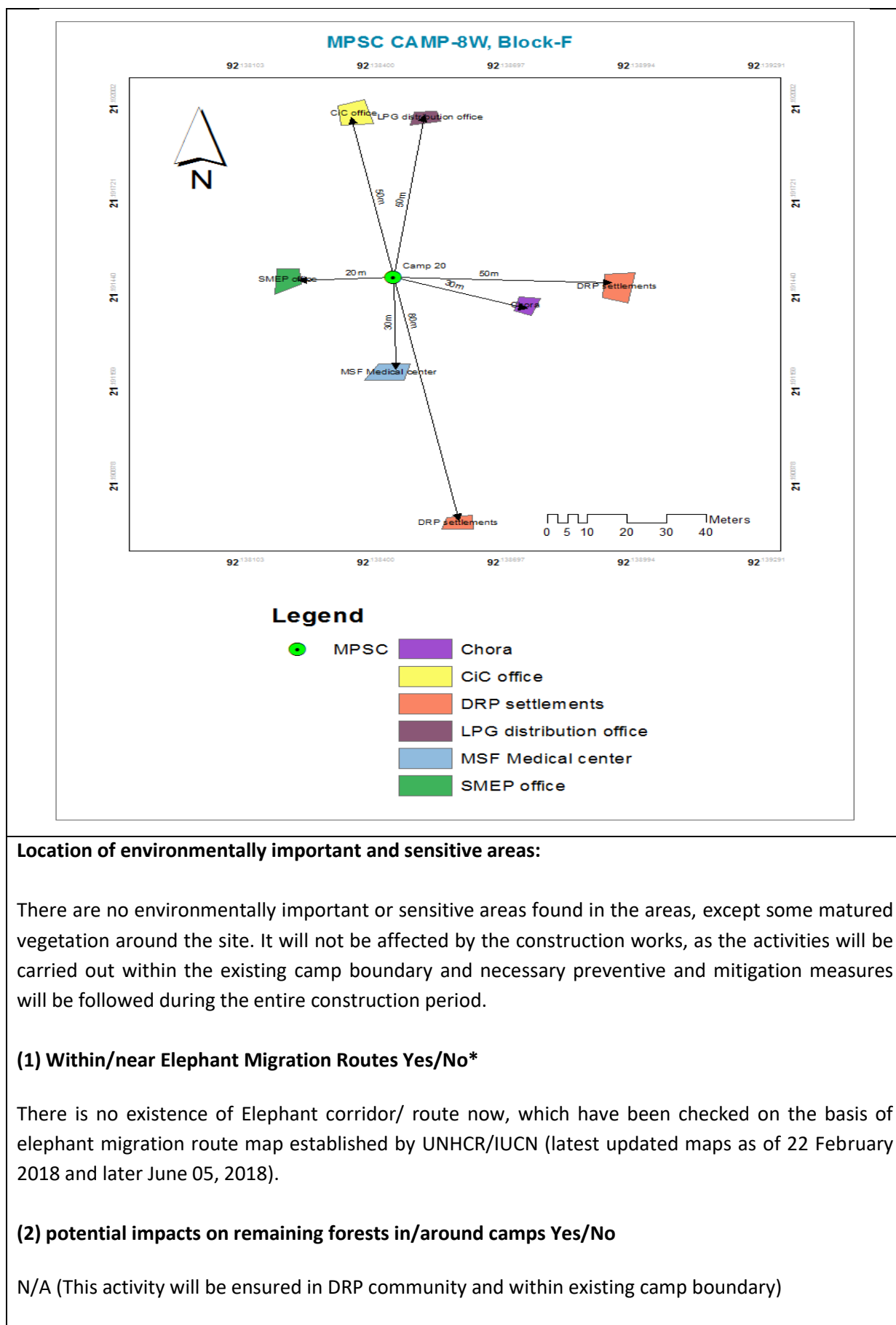
Section B: Environmental Screening**B.1: Environmental feature of sub-project location**

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

On the north side of the sub project CiC office (50m), LPG distribution office (50m); on the south side of the sub-project area MSF Medical center (30m), DRP settlements (80m); on the east side DRP settlements (50m), chorra (30m) and on the west side SMEP office (20m).

There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.



(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:
Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation):

N/A (the sub-project will be constructed in a plain land and within an identified camp boundary)

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 750 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2021). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

**State of forestation:**

Patches of vegetation containing large and matured trees on all edges of the proposed subproject area are located within 200m radial distance.

Summary of water balance analysis (For water supply scheme only):

N/A

B.2: Pre construction Phase**Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable):**

20ft. HBB Army road is passing on the north side of the sub-project. It is possible to carry the construction materials on this road to the construction site.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:

Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.

Possible location of labor camps:

Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.

Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes viii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and ix) clay are the most common type of building material used in construction.

Identification of access road for transportation (Yes/No):

20ft. HBB Army road is passing on the south side of the sub-project. It is possible to carry the construction materials on this road to the construction site.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with CiC authority.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly



composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 200 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period.

Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

Around 3336 sq. feet land is required for the sub-project establishment.

There is reasonable vegetation around the sub-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No pre-existing drainage channel is found. Though a marshy land is found outside of the construction area, but will not be affected because of having a fair distance from the construction site and the adoption of proper construction site management practices.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

Low. The proposed multipurpose community and service center will be equipped with full facilities for conducting multipurpose services to targeted people, including separate toilets (sanitary) for male and female persons, water supply and filtration, storage and other facilities. No fecal sludge will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be

produced in a typical day and higher amount of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC authority should be made aware of this separation and disposal procedure.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

During the operation phase, this Multipurpose Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There is no protected area in or around the project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

The proposed site is located inside the camp area. A HBB road connects the sites with Army road. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc. therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because



of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere.	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. - Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of students, children,	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC. - Proper covering of dust producing materials with polythene sheet,	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	animals, etc.)		• Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. • Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is low	• Water spraying at the demolition site • Fencing / Installing barriers should be shield from dust and aggregates • Avoid usage of machines/equipment with extra noise; • Do not accumulate and burn waste at the site • Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders • It needs to Identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies • Make mandatory the use of safety gears (helmets, safety belts, masks, gloves and boot) by workers depending on nature of work.	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.			
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	Under the sub-project intervention, the overall score is low.	- Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. - Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity; Waste disposal record.	Prior to the start of Construction works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. Camp and working areas are to be kept clean and tidy at all times.			
	Accidents	Under the sub-project intervention, the overall score is low.	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. - Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc. should be available in the site during construction period.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score is low.	- Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage. - Involve the community in planning the work program so that any particularly noisy or otherwise invasive activities can be scheduled to avoid sensitive times. - Avoid using of construction equipment	Contractor, environmental specialist of D&SC	Number of complaints from stakeholders, Use of silencers in noise producing equipment	Daily



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			producing excessive noise at school time & at night. • Ear protection devices for the workers & site staffs should be available in site during construction period.		and sound barriers, Noise Level following decibel meter (dB)	
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.	Under the sub-project intervention, the overall score is low.	• Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. • Use tarpaulins to cover soils, sand and other loose material when transported by trucks. • Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free. • Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). • Limiting speed of construction vehicles in work sites to maximum of 20 km/h. • Regular monitoring of air quality.	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution control devices, Maintain records	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	- Prohibit employees from cutting of trees for firewood. - If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. - Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	- Prevent excessive noise; - Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); - No fires permitted on site except if needed for the construction works; - Staff must be trained up for operating equipment, - Availability and access to first-aid equipment and medical supplies. - Ensure the presence and use of safety gear at site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets, Uniforms etc., - Ensure adequate supply of drinking water.	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at project location;	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Sanitation facilities for male & female workers separately.			
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - All affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; - All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; - The contractor must arrange the cancellation of all temporary services;	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works
	Odor& waste disposal	Under the issue the overall score is low.	Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and PMU	Complaints from communities	Site inspection daily / weekly basis.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Vegetation	Under the issue the overall score is low.	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions;	Over the completion of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turfing, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required. Mention some recommendation on E&S assessment ESMP*

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.



Appendix-2

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Construction of 22 Multipurpose Service Center Steel Frame Building (LGED/EMCRP-W4): MPSC of Rohingya Camp-8W, Block-F

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of	Selected site will be far away from any water bodies or	PIU & Contractor	Environmental Consultant of PIU,



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	natural drainage	natural flow path to avoid the flash flood or any kind or surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.		PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	- Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. - It will be ensured that proper training and guidance are provided on general and occupational health and safety to Contractors' personnel and labors forces, and records of	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		training sessions are to be kept on site. All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. - Adequate facilities ensuring sanitation for labor camps will	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		be put in place. - Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labour forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared time to time for all types of work activities on site. - Proper walkways will be prepared for students and teachers in existing school boundary. - Proper Signpost at any slippery areas will be ensured in construction site.	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. - Adequate quantities of drinking water will be available at all		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Maintenance of assets, properties and	Periodic maintenance of building structures, plumbing, water filtering and electric equipment has to be carried out.	The party CiC find fit	UNO, Upazila Chairman of Upazila



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	equipment	- Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.		Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization works:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.
- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.



- Kitchen space disassembling must be treated with same level of accuracy and caution.
- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.



For wastes generated from construction and demobilization debris:

- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.
- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.
- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site.
- Burning of any type of wastes in the construction site shall be prohibited completely.

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Appendix-3

Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 20,000	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles	LS	LS @ Tk 30,000	30,000
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	2 nos.	@10,000 each	20,000
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as	2 no.	LS @ Tk. 30,000	60,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.			
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. The Safeguard personnel will take duty for 10 sites, so one-eleventh of the personnel cost is counted here.	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months (1/11 one site). (Net payment excluding Tax & VAT)	57,272.73
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73

**Cost of H&S Measures under COVID 19 Situations**

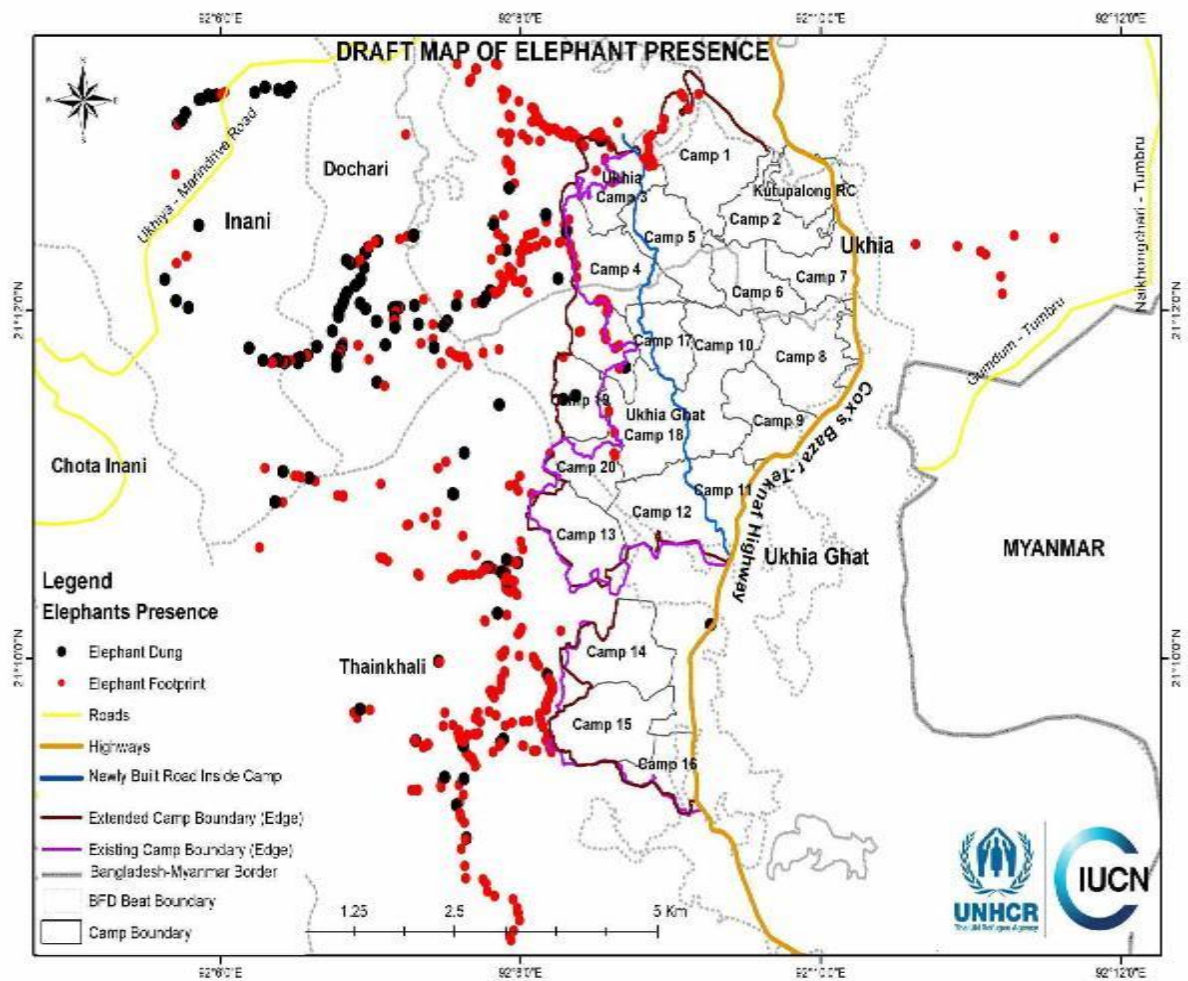
Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for	2 bottles and 1 Can for each	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office



Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
	Refill)	site						
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						165,125.00	

Appendix-4



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

Camp-8W, Block-F Multipurpose Community and Service Center (Package Number: EMCRP/W4)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

জরুরী ভিত্তিতে রোহিঙ্গা সংকট মোকাবেলায় মান্দি সেবির প্রকল্প

Local Government Engineering Department (LGED)

Public Consultation Participants List

Focus Group Discussion

সময়: ১০:৫০

তারিখ: ০৭.০২.২০

উপ-প্রকল্প/কম্পোনেন্ট এর নাম: MPSC - Camp - 8W - Block - F

মত বিমর্শন স্থান: Camp-8W, Block-F, Sub project এর সমন্বিত পরিদর্শন (নথী)

ইউনিয়ন: নান্দা, পাইলট জোড় নং: ডাকঘর: গাঙ্গুলী উপজেলা: গুয়াহাটি জেলা: কক্সবাজার

সব প্রকল্প নং: EMCRP/W-4

অংশগ্রহণকারীদের তালিকা (পরিচয় ও স্বাক্ষর)

ক্রম নং	নাম	বয়স	পুরুষ/নারী	গ্রাম	স্বাক্ষর / চিহ্ন
০১	শ্রী: সাদাতুল্লাহ আলম	২৫	পুরুষ	Camp 8W Block-F	ASR
২	জামাল হুদা	২৫	"	"	JS
৩	জামাল	২০	"	"	JS
৪	জামাল	২৪	"	"	জামাল
৫	জামাল	২৫	"	"	JS
৬	জামাল (মুন্সি)	২৭	"	"	JS
৭	জামাল (মুন্সি)	২৪	"	"	JS
৮	জামাল (মুন্সি)	২১	"	"	JS
৯	জামাল (মুন্সি)	২৫	"	"	JS

Public consultation participant list



Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762

IDA Credit No. 5561-BD



ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-20Ext.,
Block-S1B1, Type-2
Union: Palongkhali; Upazila: Ukhiya
District: Cox's Bazar

Funded by:



Government of the People's Republic of Bangladesh & World Bank

Design and Supervision Consultancy:



Development Design Consultants Ltd.

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department

MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank

1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Community and Service Centers are to offer the facilities which will improve the availability.

These Multipurpose Community and Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which are identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multipurpose Community and Service Center (MPSC) will be constructed under Palongkhali union in Rohingya camp number 20Ext., Block S1B1 of Ukhiya Upazila under Cox's Bazar district. The catchment area of the subproject comprises the surrounding area of Rohingya camp 20Ext. Typical camp settlement settings of the area are no exception than

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

other camp locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya Camp-20Ext., Block-S1B1
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
Owner of land	Government
Land Available (sq.ft.)	5300
Structural Design Option	Type-2 (Rectangular Steel Frame 2-storey building (90 feet x 41 feet 7 inches)
Catchment area	Camp-20Ext.
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	There is no direct route to connect the facility since it is inside camp location.
Land acquisition	Not required
Current land condition	The location is an identified open space

[D&SC and Field survey, 2020]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-20Ext.; Block-S1B1		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3753
Number of Floors	2	3753X2
Number of Class room (sq. feet)	3	each@ 14'-11" X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.

1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-20Ext., Block-S1B1 of Ukhiya Upazila in Cox's Bazar District. The site location is relatively a high plain land but not accessible through vehicles as of HBB road is present near the site which does not connect with any main road. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Community and Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
GPS position	21.190682 N and 92.136986 E
Distance from Upazila HQ	15 km
Nearby major road	20ft HBB Army road
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2020]

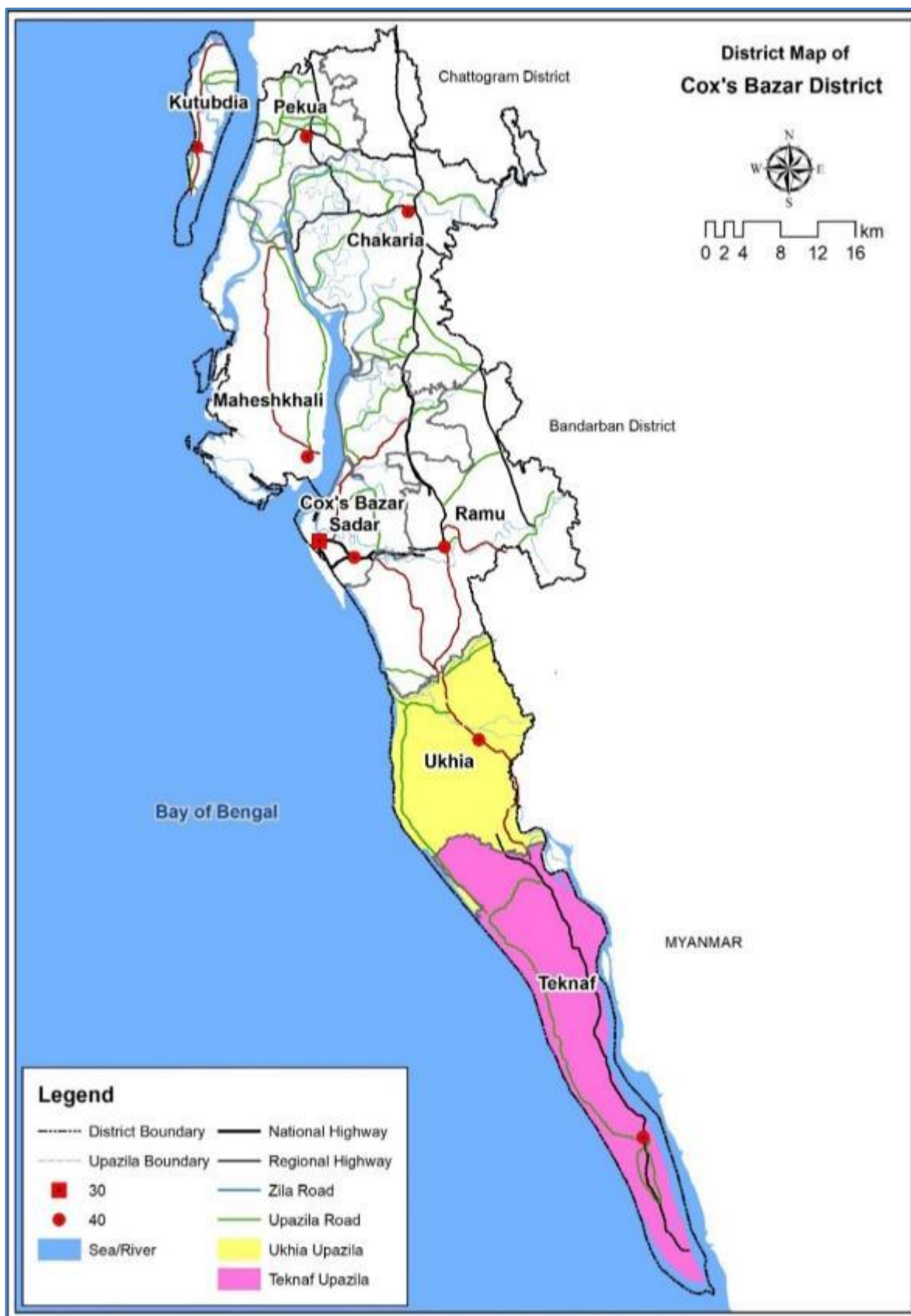


Figure 1.3.1: District Map with project location

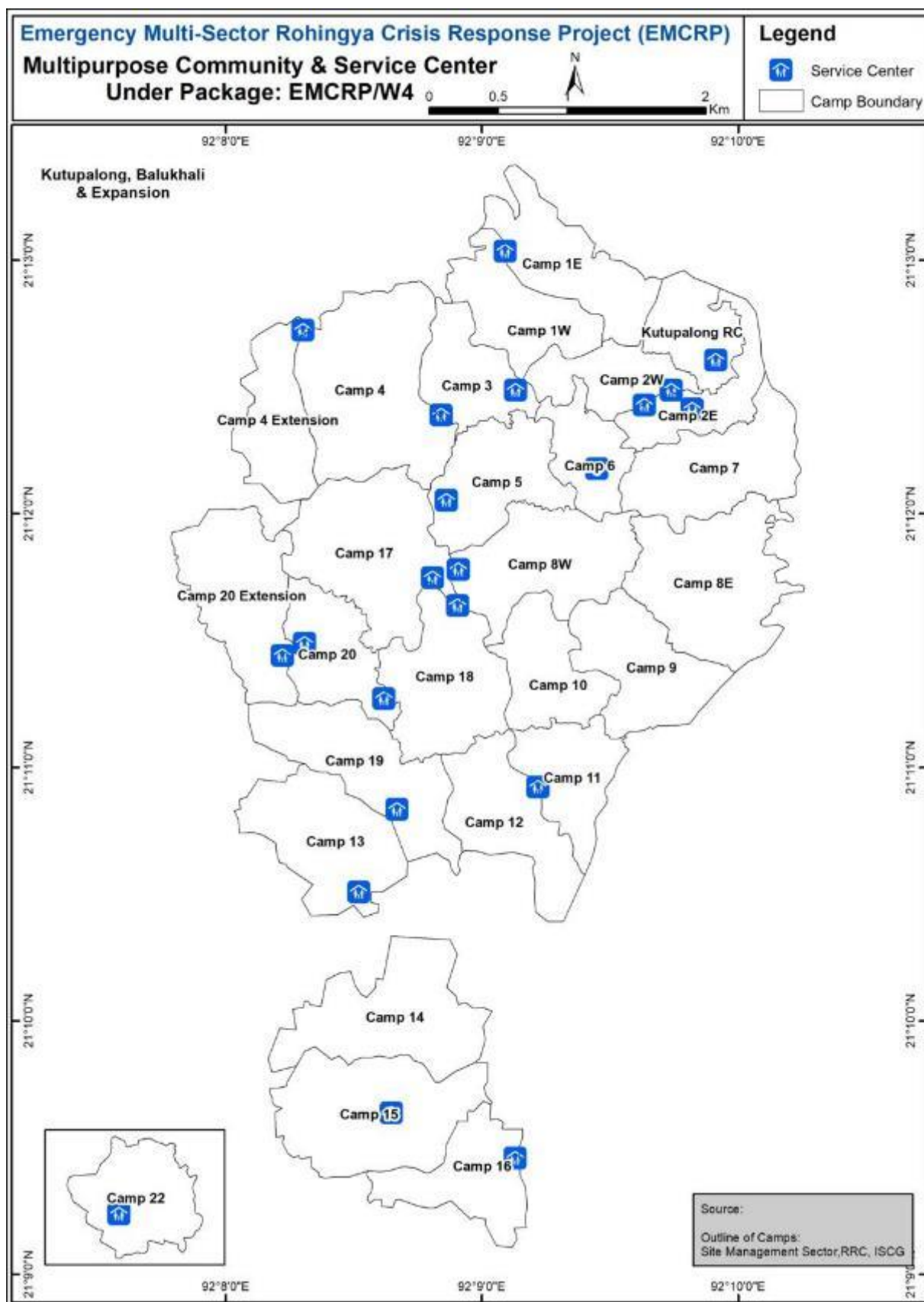


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)

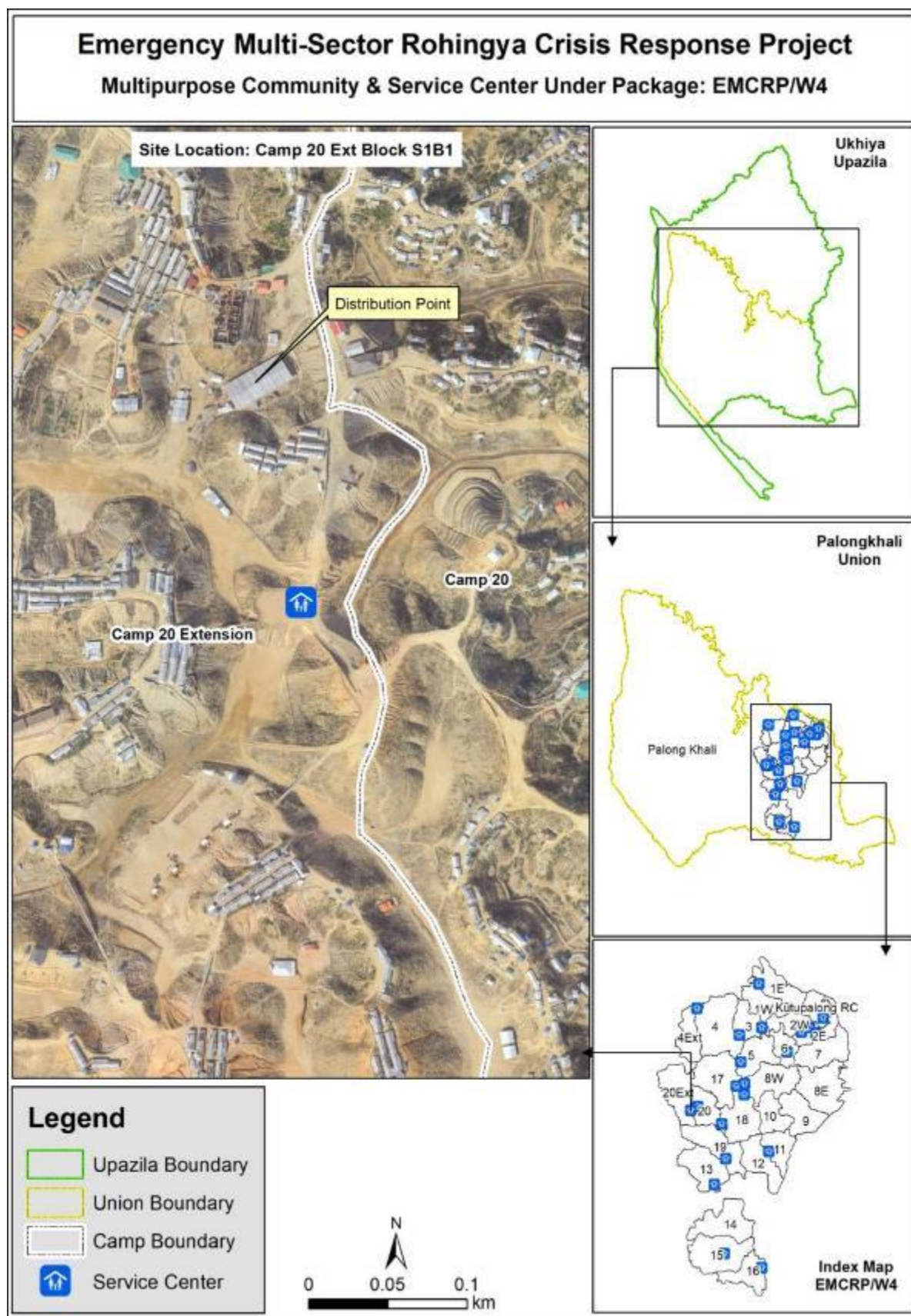


Figure 1.3.3: Union Map with Sub-project location in Camp area

1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	DPHE office (55m), IOM SD Hub (50m), Bazar (45m), food distribution point (250m), DRP settlements (50m)
South side	DRP settlement (100m)
East side	WFP office (25m), DRP settlements (75m)
West side	CiC office (40m), mosque (50m)

[Sources of data: D&SC Field survey, 2020]



Figure 1.4.1: Present condition of the Sub-project area



Figure 1.4.2: Proposed location of MPSC construction

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 12 March 2020 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 11 persons, and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location in particular has no major complications and is in relevance with the CiC office authority currently. Present Camp in Charge (CiC) has suggested to start the development works as early as possible.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Rohingya Camp 20Ext., Block-S1B1 and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Consultation with CiC authority



Consultation with DRP

Figure 2.1.1: Public Consultation Meeting in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people considered that the selected site is suitable for the construction of Multipurpose service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.
- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.
- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.
- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment. Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine

which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 12 March 2020 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected sited allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. On the north of the sub project DPHE office (55m), IOM SD Hub (50m), Bazar (45m), food distribution point (250m), DRP settlements (50m); on the south DRP settlement (100m); on the east side of the sub-project area WFP office (25m), DRP settlements (75m) and on the west side CiC office (40m), mosque (50m). Few disturbance to some of these establishments/features is anticipated due to construction activities for the case of not being in a sufficient distance from the construction site which is why safety measures such as, strict construction site management system-including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials et cetera should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from piling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from piling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routs and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the

mitigation options, different initiatives have been undertaken, such as formation and capacity development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones, as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree planation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones have been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tubewell in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose Community and Service Center will be constructed on a high land where some matured vegetation is found. Due to the construction activities of this Sub-project, trees (small and medium size) will not be cut down as well as 10 nos. of trees will be planted in the target location. Further, some settlements of sub-project area might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall effects for this proposed

construction works are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.

- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.
- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures are being realized over time. A comprehensive monitoring framework is suggested in Project ESMF and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the

environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguards specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the

backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.
- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.

Appendix-1**Environmental Screening Form**

Sub-Project Description Form: (MPSC of Rohingya Camp-20 Ext., Block- S1B1)

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Ukhiya

Union: Palongkhali

Name of Community/Local Area: Palongkhali, Rohingya Camp-20Ext.

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose community and Service Center Steel Frame 2-storey building will be constructed within target location.

Estimated footprint / land area for this sub-project is 5300 sq. feet

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.): Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified location on Rohingya camp area. This location is not in any sensitive area, however to the south-west side there is a low ground where an existing semi paka road. Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to



the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to construction of a new building on the selected place. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic. Human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified. On the north of the sub project DPHE office (55m), IOM SD Hub (50m), Bazar (45m), food distribution point (250m), DRP settlements (50m); On the south side of the sub-project area DRP settlement (100m); on the East WFP office (25m), DRP settlements (75m) and on the west CiC office (40m), mosque (50m) is present on the surrounding target area. Some degree of disturbance is anticipated due to construction activities to those components since they are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration route were nearly 1 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 02. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

Sub-project Location:

The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district. The sub-project area is located at 21.190682 N and 92.136986 E. The distance from the Upazila headquarter is about 15 km. Nearby major road is 20ft HBB Army road.

Land ownership

Land is owned by Government.

Expected construction period: 18 (Eighteen months)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

Project intervention area is found to be an open space, but influence area should consider nearly half a kilometer radius around the proposed site. On the north of the sub project DPHE office (55m), IOM SD Hub (50m), Bazar (45m), food distribution point (250m), DRP settlements (50m); On the south side of the sub-project area DRP settlement (100m); on the East WFP office (25m), DRP settlements (75m) and on the west CiC office (40m), mosque (50m) but there is no chance to disturbance during this construction activity. No structures, trees and livelihood will be affected by this construction activity. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby.

Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

Section B: Environmental Screening

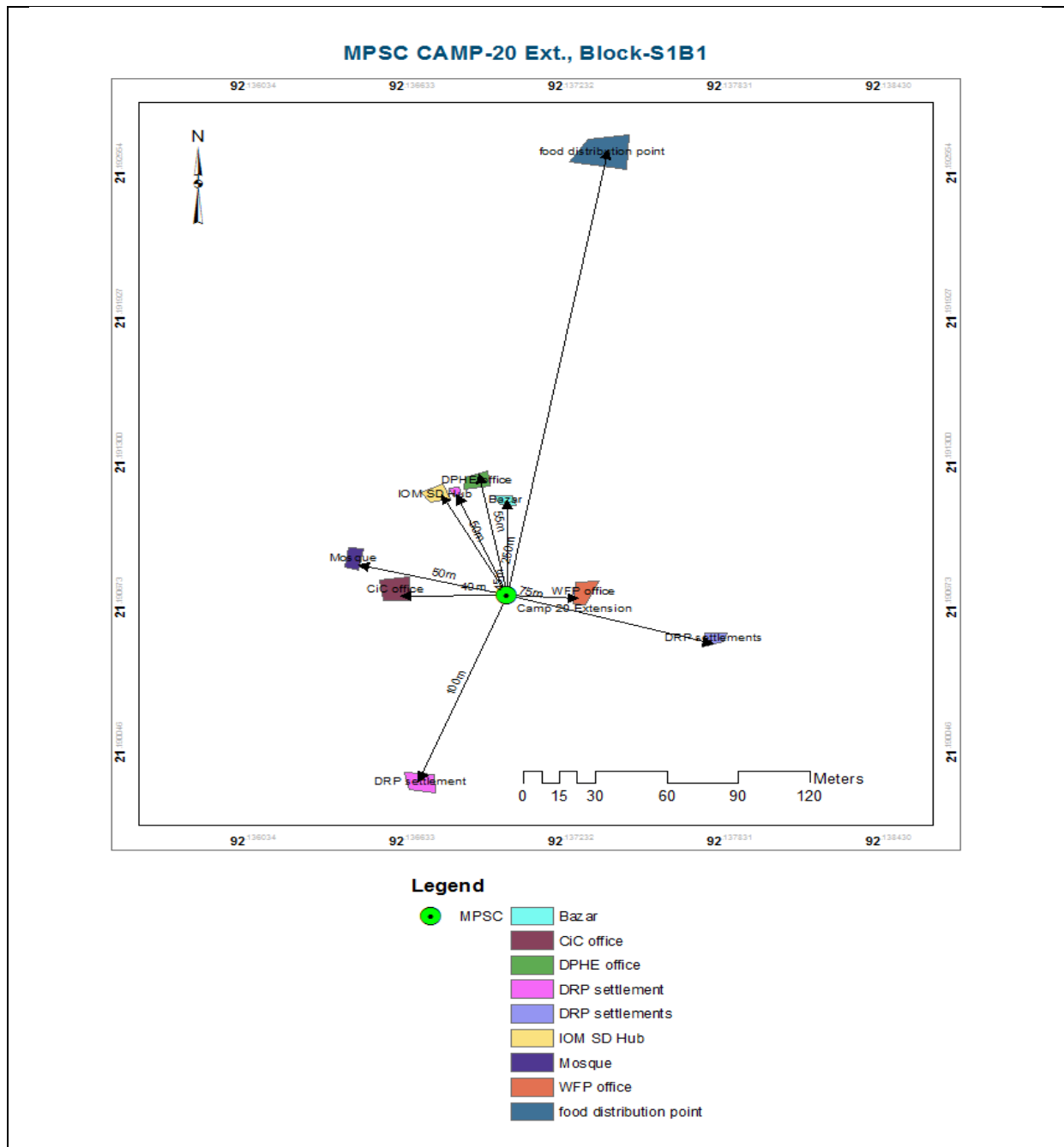
B.1: Environmental feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

On the north of the sub project DPHE office (55m), IOM SD Hub (50m), Bazar (45m), food distribution point (250m), DRP settlements (50m); On the south side of the sub-project area DRP settlement (100m); on the East WFP office (25m), DRP settlements (75m) and on the west CiC office (40m), mosque (50m).

There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.



Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. It will not be affected by the construction works, as the activities will be carried out within the existing camp boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

(1) Within/near Elephant Migration Routes Yes/No*

There is no existence of Elephant corridor/ route now, which have been checked on the basis of elephant migration route map established by UNHCR/IUCN (latest updated maps as of 22 February 2018 and later June 05, 2018).

(2) potential impacts on remaining forests in/around camps Yes/No

N/A (This activity will be ensured in DRP community and within existing camp boundary)

(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:
Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation):

N/A (the sub-project will be constructed in a plain land and within an identified camp boundary)

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 700 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2019). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.



Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)
Status of wildlife movement:
N/A (None of the information was found about the wildlife movement in or across the area)
State of forestation:
Patches of vegetation containing large and matured trees on all edges of the proposed subproject area are located within 200m radial distance.
Summary of water balance analysis (For water supply scheme only):
N/A

B.2: Pre construction Phase

Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable):
20ft. HBB Army road is passing on the north side of the sub-project. It is possible to carry the construction materials on this road to the construction site.
Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:
Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.
Possible location of labor camps:
Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.
Requirement and type of raw materials (e.g. sand, stone, wood, etc.):
i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes viii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and ix) clay are the most common type of building material used in construction.
Identification of access road for transportation (Yes/No):
20ft. HBB Army road is passing on the north side of the sub-project. It is possible to carry the construction materials on this road to the construction site.
Location identification for raw material storage:
Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with CiC authority.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase
Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 200 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period.

Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

Around 3753 sq. feet land is required for the sub-project establishment.

There is reasonable vegetation around the sup-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No pre-existing drainage channel is found. Though a marshy land is found outside of the

construction area, but will not be affected because of having a fair distance from the construction site and the adoption of proper construction site management practices.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

Low. The proposed multipurpose community and service center will be equipped with full facilities for conducting multipurpose services to targeted people, including separate toilets (sanitary) for male and female persons, water supply and filtration, storage and other facilities. No fecal sludge will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be produced in a typical day and higher amount of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC authority should be made aware of this separation and disposal procedure.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

During the operation phase, this Multipurpose Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There is no protected area in or around the project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:



The proposed site is located inside the camp area. A HBB road connects the sites with Army road. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc. therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere.	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. - Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC. - Proper covering of dust producing materials	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	students, children, animals, etc.)		with polythene sheet, • Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. • Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is low	• Water spraying at the demolition site • Fencing / Installing barriers should be shield from dust and aggregates • Avoid usage of machines/equipment with extra noise; • Do not accumulate and burn waste at the site • Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders • It needs to Identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies • Make mandatory the use of safety gears	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			(helmets, safety belts, masks, gloves and boot) by workers depending on nature of work. Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.			
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	Under the sub-project intervention, the overall score is low.	- Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. - Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity; Waste disposal record.	Prior to the start of Construction works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times.			
	Accidents	Under the sub-project intervention, the overall score is low.	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. - Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc. should be available in the site during construction period.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score is low.	- Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage. - Involve the community in planning the work program so that any particularly noisy or	Contractor, environmental specialist of D&SC	Number of complaints from stakeholders, Use of silencers in	Daily



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			otherwise invasive activities can be scheduled to avoid sensitive times. • Avoid using of construction equipment producing excessive noise at school time & at night. • Ear protection devices for the workers & site staffs should be available in site during construction period.		noise producing equipment and sound barriers, Noise Level following decibel meter (dB)	
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by	Under the sub-project intervention, the overall score is low.	• Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. • Use tarpaulins to cover soils, sand and other loose material when transported by trucks. • Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free. • Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). • Limiting speed of construction vehicles in work sites to maximum of 20 km/h. • Regular monitoring of air quality.	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution control devices,	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	mitigation measures.				Maintain records	
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	- Prohibit employees from cutting of trees for firewood. - If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. - Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	- Prevent excessive noise; - Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); - No fires permitted on site except if needed for the construction works; - Staff must be trained up for operating equipment, - Availability and access to first-aid equipment and medical supplies. - Ensure the presence and use of safety gear at site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets,	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at project location;	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Uniforms etc., - Ensure adequate supply of drinking water. - Sanitation facilities for male & female workers separately.			
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - All affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; - All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; - The contractor must arrange the cancellation of all temporary services	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works
	Odor& waste disposal	Under the issue the overall score is low.	Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and PMU	Complaints from communities	Site inspection daily / weekly basis.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Vegetation	Under the issue the overall score is low.	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions;	Over the completion of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turfing, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required. Mention some recommendation on E&S assessment ESMP*

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.



Appendix-2

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Construction of 22 Multipurpose Service Center Steel Frame Building (LGED/EMCRP-W4): MPSC of Rohingya Camp-20Ext., Block-S1B1

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of	Selected site will be far away from any water bodies or	PIU & Contractor	Environmental Consultant of PIU,



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	natural drainage	natural flow path to avoid the flash flood or any kind or surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.		PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	- Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. - It will be ensured that proper training and guidance are provided on general and occupational health and safety to Contractors' personnel and labors forces, and records of	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		training sessions are to be kept on site. All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. - Adequate facilities ensuring sanitation for labor camps will	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		be put in place. - Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labour forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared time to time for all types of work activities on site. - Proper walkways will be prepared for students and teachers in existing school boundary. - Proper Signpost at any slippery areas will be ensured in construction site.	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. - Adequate quantities of drinking water will be available at all		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Maintenance of assets, properties and	Periodic maintenance of building structures, plumbing, water filtering and electric equipment has to be carried out.	The party CiC find fit	UNO, Upazila Chairman of Upazila



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	equipment	- Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.		Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization works:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.



- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.
- Kitchen space disassembling must be treated with same level of accuracy and caution.
- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.



For wastes generated from construction and demobilization debris:

- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.
- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.
- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site.
- Burning of any type of wastes in the construction site shall be prohibited completely.

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Appendix-3

Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 20,000	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles	LS	LS @ Tk 30,000	30,000
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	2 nos.	@10,000 each	20,000
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as	2 no.	LS @ Tk. 30,000	60,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.			
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. The Safeguard personnel will take duty for 11 sites, so one-eleventh of the personnel cost is counted here.	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months (1/11 one site). (Net payment excluding Tax & VAT)	57,272.73
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73

**Cost of H&S Measures under COVID 19 Situations**

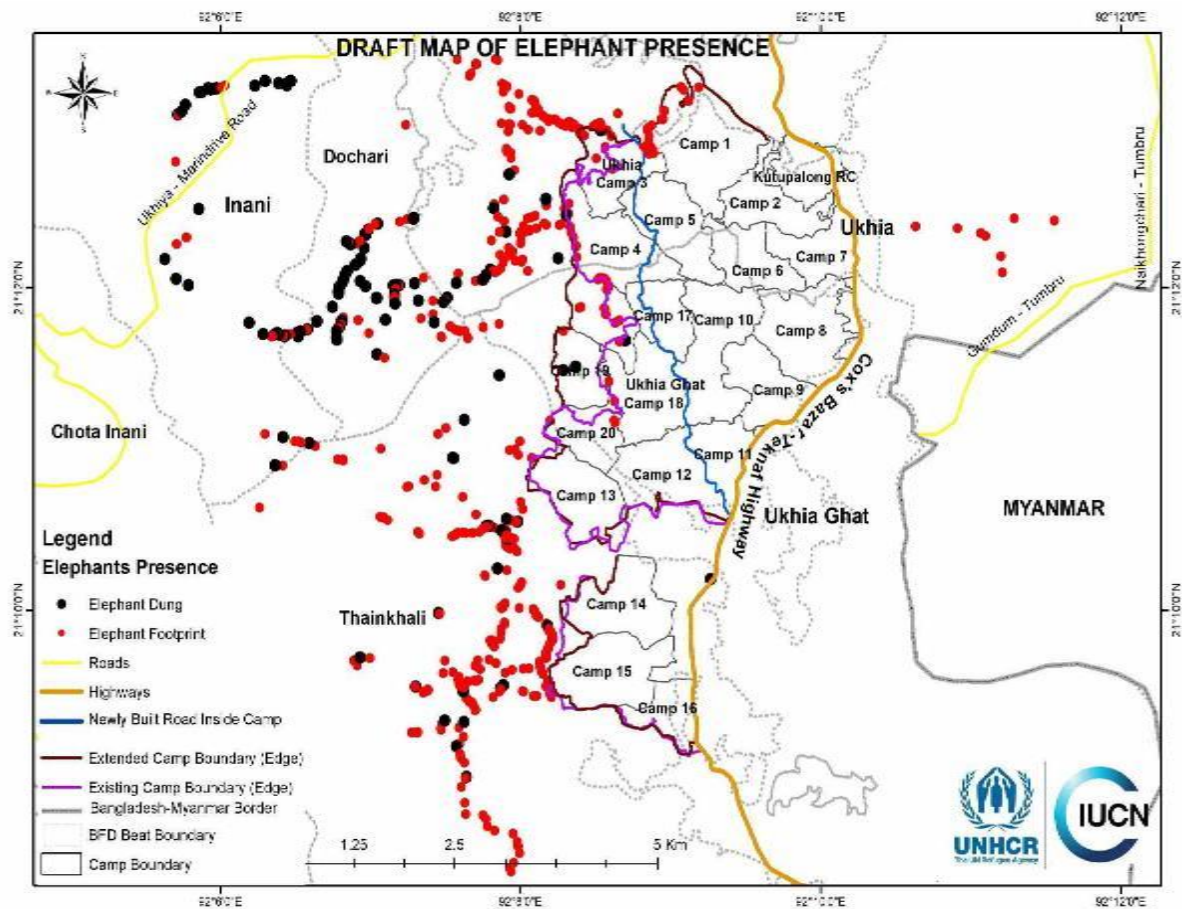
Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for	2 bottles and 1 Can for each	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office



Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
	Refill)	site						
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						165,125.00	

Appendix-4



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)
ককরা ডিভিজে রোহিঙ্গা সংকট মোকাবেলায় মাল্টি সেক্টর প্রকল্প
Local Government Engineering Department (LGED)
Public Consultation Participants List
Focus Group Discussion

সময় : 12:00
উপ-প্রকল্প/কম্পোনেন্ট এর নাম : MPGE - Camp - 20. Ext. Block-S1B1
মত বিনিময় স্থান : Camp 20. Ext. DPHE ওর ওয়ান
ইউনিটন : গার্মাখালি ওয়ার্ড নং : আবদার : বামুনালী উপজেলা : ধলা জেলা : ককরা জেলা
সাব প্রকল্প নং : EMCRP/W-4

অংশগ্রহণকারীদের হস্তিরা (পরিচয় ও স্বাক্ষর)

ক্রম নং	নাম	বয়স	পুরুষ/নারী	গ্রাম	স্বাক্ষর / চিহ্ন
১	জাহান্নাওয়ার	২০	পুরুষ	Camp-20 Ext	
২	জামাল হোসেন	৪২	"	"	
৩	জাহান্নাওয়ার	২০	"	"	
৪	জাহান্নাওয়ার	৬৭	"	"	
৫	জাহান্নাওয়ার	৪৫	"	"	
৬	জাহান্নাওয়ার	৪০	"	"	
৭	জাহান্নাওয়ার	৬২	"	"	
৮	জাহান্নাওয়ার	৪৫	"	"	
৯	জাহান্নাওয়ার	৬৭	"	"	
১০	জাহান্নাওয়ার	২১	"	"	
১১	জাহান্নাওয়ার	২২	"	"	

Public consultation participant list



Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762

IDA Credit No. 5561-BD



ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-12, Block-J16,
Type-03

Union: Palongkhali; Upazila: Ukhiya
District: Cox's Bazar

Funded by:



Government of the People's Republic of Bangladesh & World Bank

Design and Supervision Consultancy:



Development Design Consultants Ltd.

March 2021

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department

MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank



1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Service Centers are to offer the facilities which will improve the availability.

These Multipurpose Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which are identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multipurpose Community and Service Center (MPSC) will be constructed under Palongkhali union in Rohingya camp number 12 of Ukhiya Upazila under Cox's Bazar district. The catchment area of the subproject comprises the surrounding area of Rohingya camp 12. Typical camp settlement settings of the area are no exception than other camp

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya Camp-12, Block-J16
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
Owner of land	Government
Land Available (sqft.)	3690
Structural Design Option	Type-03 (Rectangular Steel Frame 2-storey building (80 feet x 42 feet 5 inches)
Catchment area	Camp-12
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	There is a camp-12 connecting road which comes from the main Cox's Bazar to Teknaf road.
Land acquisition	Not required
Current land condition	The location has an abandoned facility which was used by UNHCR for relief distribution. Now the location is not in use in any form.

[D&SC and Field survey, 2020]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-12; Block-J16		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3326.64
Number of Floors	2	3326.64X2
Number of Class room (sq. feet)	3	each@ 11'-7"X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.

1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-12, Block-J16 of Ukhiya Upazila in Cox's Bazar District. The site location is relatively a plain land and accessible through vehicles as of 11ft wide HBB road is present near the site which connects with Cox's Bazar-Teknaf highway main road. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
GPS position	21.18200°N and 92.15363° E
Distance from Upazila HQ	10 km
Nearby major road	Cox's Bazar- Teknaf highway
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2021]

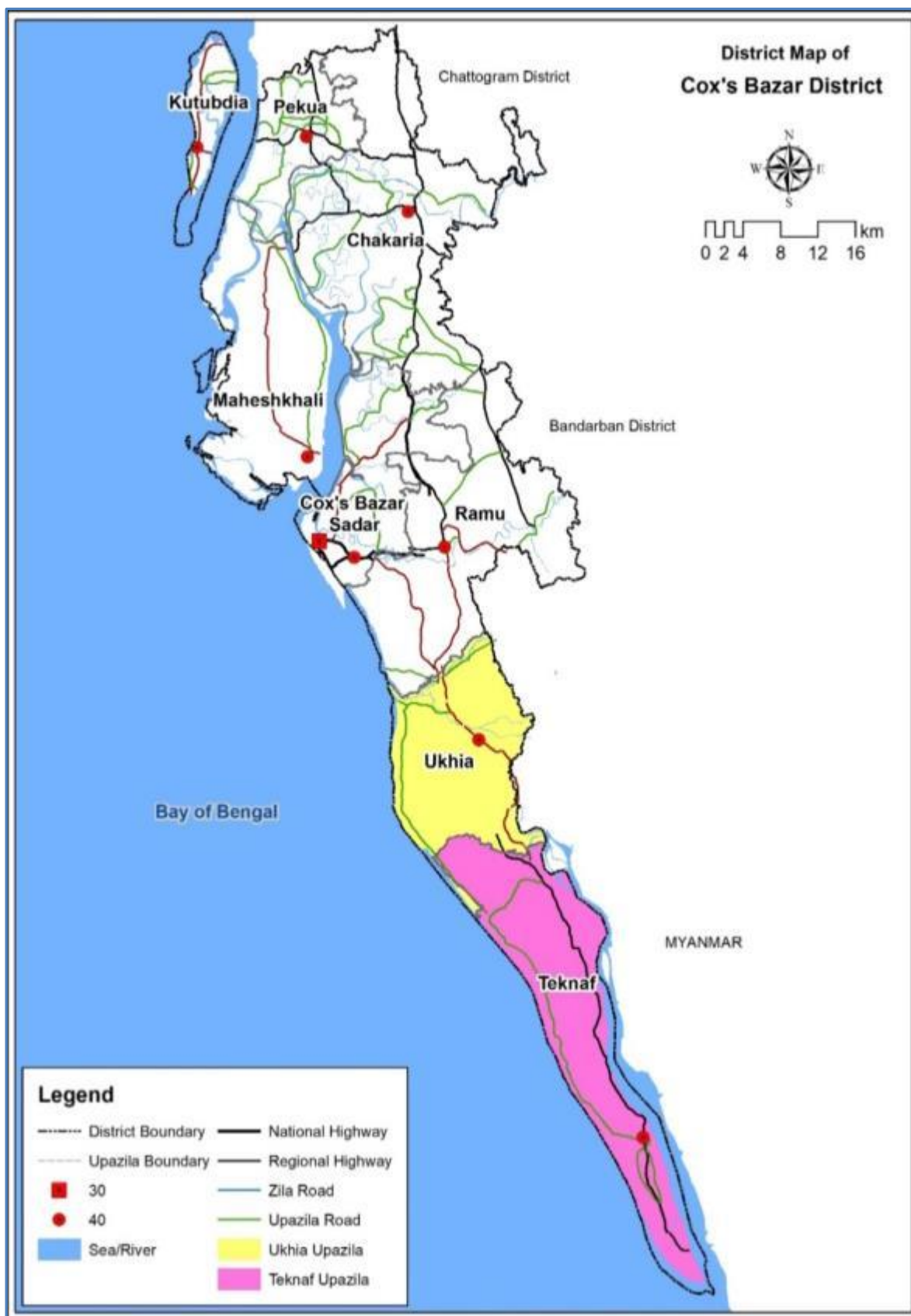


Figure 1.3.1: District Map with project location

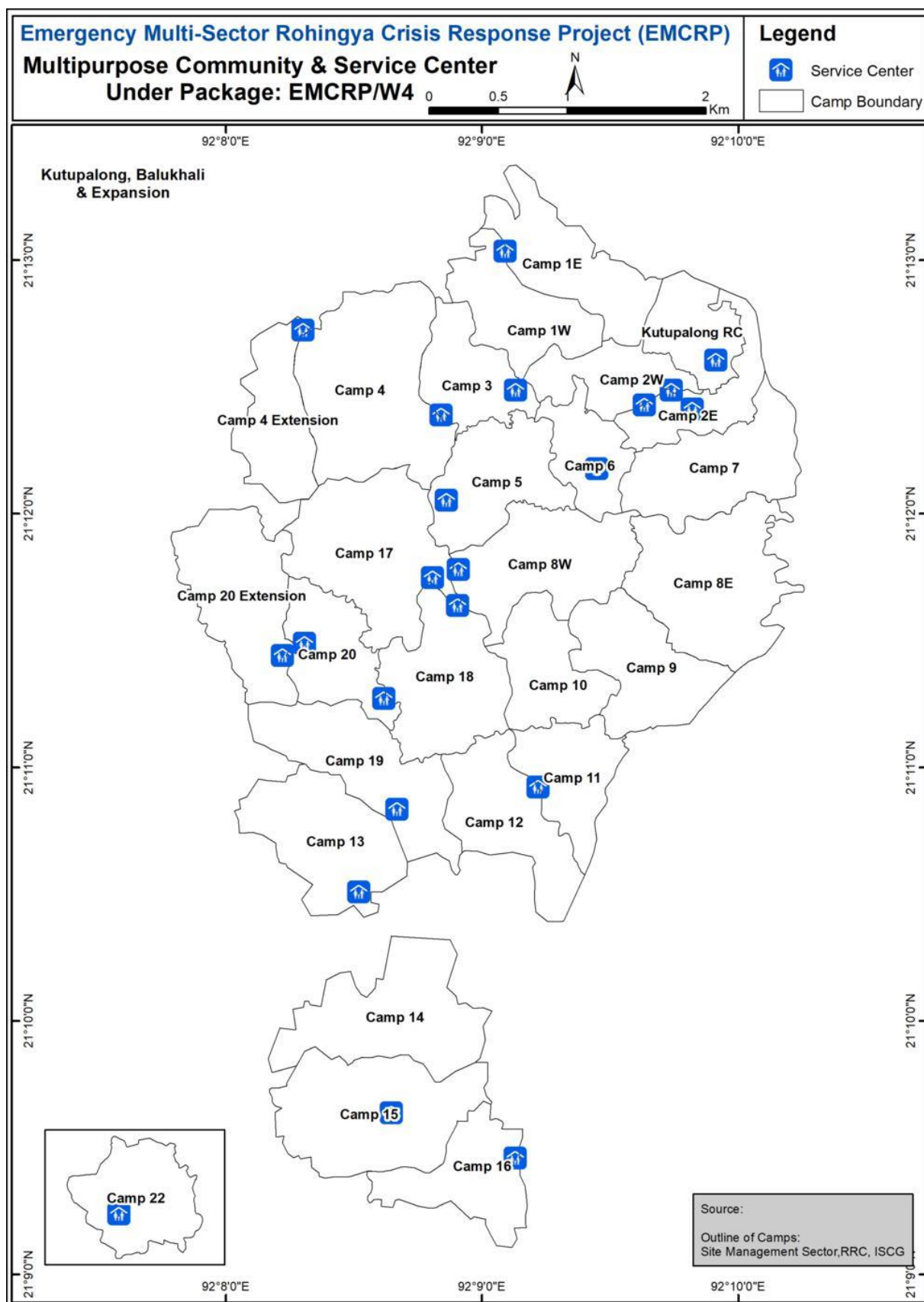


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)

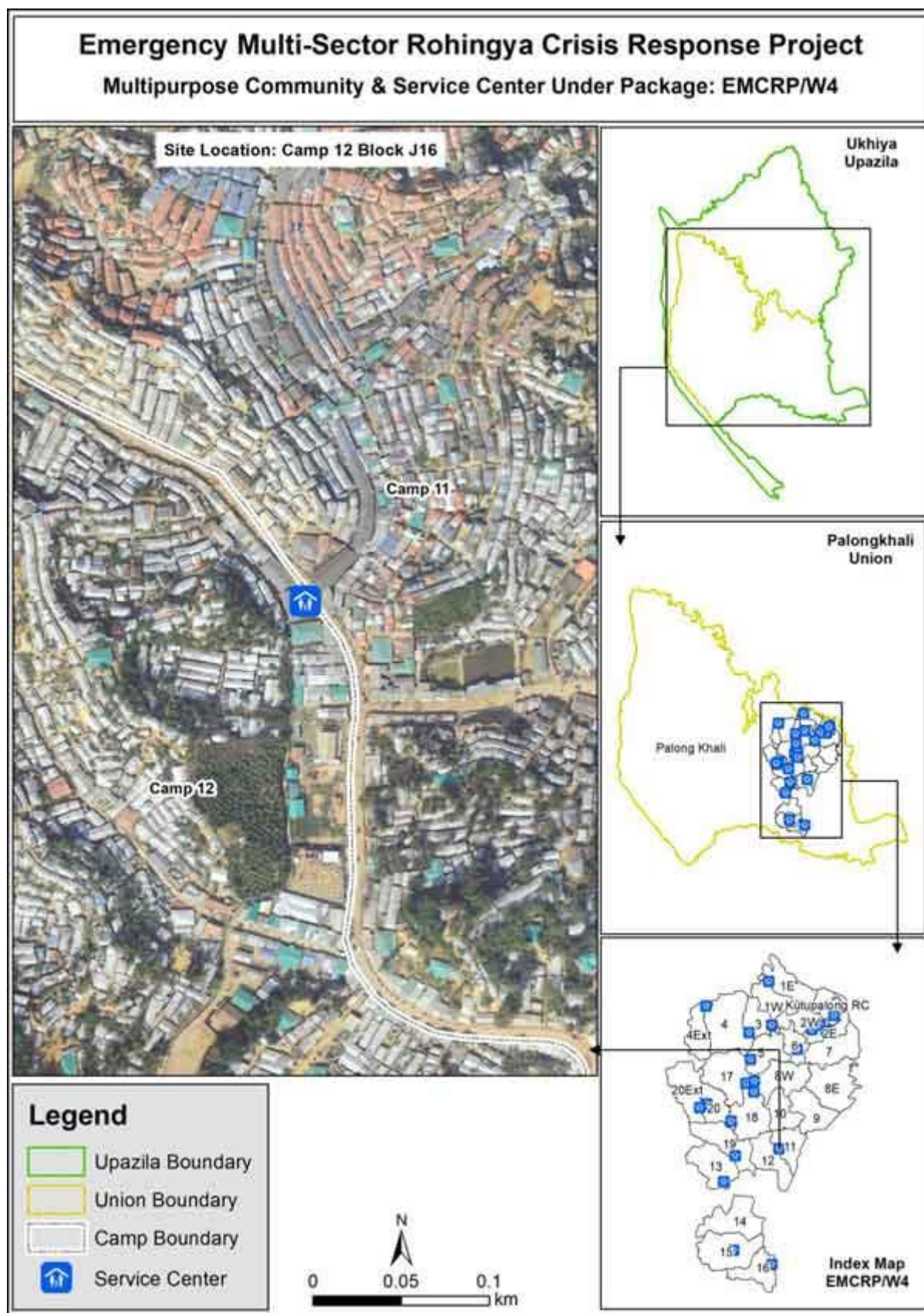


Figure 1.3.3: Union Map with Sub-project location in Camp area

1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	Mosque(10m), School(500m)
South side	Mosque(50m)
East side	Mosque(20m), Health Post(10m)
West side	Mosque(50m), Codec School(50m)

[Sources of data: D&SC Field survey, 2021]



Figure 1.4.1: Present condition of the Sub-project area



Figure 1.4.2: Proposed location of MPSC construction

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 11 February 2021 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 07 persons, and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location in particular has no major complications and is in relevance with the CiC office authority currently. Present Camp in Charge has suggested to start the development works as early as possible. CiC was consulted over the cell phone as he was not present in his office for direct consultation. However, this location will need demolition and development work will need close consideration for the drain which is found on the west side of the selected site. This location is not currently used by any officials but in a casual manner, used by children for indoor games.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Rohingya Camp 12; Block-J16 and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Figure 2.1.1: Public Consultation Meeting with DRP in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people considered that the selected site is suitable for the construction of Multipurpose service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.
- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.
- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.
- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine

which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 11 February 2021 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected sited allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. North side includes Mosque(10m), School(500m); South side includes Mosque(50m); East side Mosque(20m), Health Post(10m); West side Mosque(50m), Codec School(50m). Few disturbances to some of these establishments/features is anticipated due to construction activities for the case of not being in a sufficient distance from the construction site which is why safety measures such as, strict construction site management system- including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials et cetera should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from pilling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from pilling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routs and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the mitigation options, different initiatives have been undertaken, such as formation and capacity development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the

current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones, as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree planation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones have been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tubewell in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose Community and Service Center will be constructed on a high land where some matured vegetation is found. Further, some settlements surrounding the sub-project area might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall effects for this proposed construction works are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.
- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.

- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures are being realized over time. A comprehensive monitoring framework is suggested in Project ESMF and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguards specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.
- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.

Appendix-1**Environmental Screening Form**

Sub-Project Description Form: (MPSC of Rohingya camp-12, Block-J16)

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Ukhiya

Union: Palongkhali

Name of Community/Local Area: Palongkhali, Rohingya Camp-12.

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose community and Service Center Steel Frame 2-storey building will be constructed within target location.

Estimated footprint / land area for this sub-project is 3326.64 sq. feet

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.): Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified location on Rohingya camp area. On the North side includes Mosque(10m), School(500m); South side includes Mosque(50m); East side Mosque(20m), Health Post(10m); West side Mosque(50m), Codec School(50m). Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to



the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to demolition of an old building and later construction of a new building on the same place. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic and human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified. On the North side includes Mosque (10m), School (500m); South side includes Mosque (50m); East side Mosque (20m), Health Post (10m); West side Mosque (50m), Codec School (50m) are present on the surrounding target area.

Some degree of disturbance is anticipated due to construction activities to those components since they are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration route is present nearly 2 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 03. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

Sub-project Location:

The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district. The sub-project area is located at 21.18200° N and 92.15363° E. The distance from the Upazila headquarter is about 10 km. Nearby major road is Cox's Bazar- Teknaf highway.

Land ownership

Land is owned by Government.



Expected construction period: 18 (Eighteen months)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

Project intervention area is found to have an abandoned bamboo fence room but influence area should consider nearly half a kilometer radius around the proposed site.

North side includes Mosque(10m), School(500m); South side includes Mosque(50m); East side Mosque(20m), Health Post(10m); West side Mosque(50m), Codec School(50m).

But there is no scope to be affected by the construction activities. No structures, trees and livelihood will be affected by this construction activity other than few demolitions works due to the pre-existing bamboo structure. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby.

Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

Section B: Environmental Screening

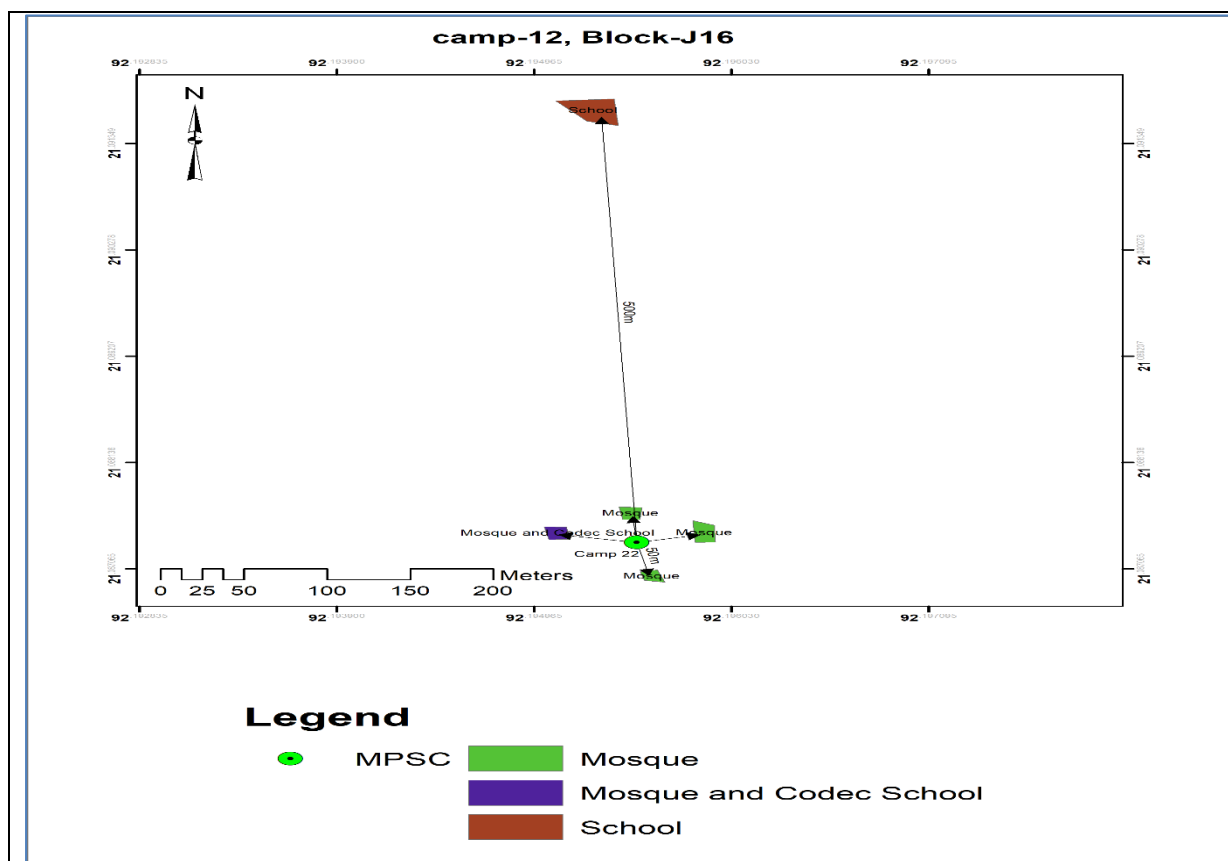
B.1: Environmental feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

North side includes Mosque(10m), School(500m); South side includes Mosque(50m); East side Mosque(20m), Health Post(10m); West side Mosque(50m), Codec School(50m)

There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.



Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. Several mosques, madrasa and DRP settlement were found during the survey. Those will not be affected by the construction works, as the activities will be carried out within the existing selected boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

(1) Within/near Elephant Migration Routes Yes/No*

There is no existence of Elephant corridor/ route now, which have been checked on the basis of elephant migration route map established by UNHCR/IUCN (latest updated maps as of 22 February 2018 and later June 05, 2018).

(2) potential impacts on remaining forests in/around camps Yes/No

N/A (This activity will be ensured in DRP community and within existing camp boundary)

(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:
Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation):

N/A (the sub-project will be constructed in a plain land and within an identified camp boundary).

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 800 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2019). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

State of forestation:

Patches of vegetation containing large and matured trees across the road side of the proposed subproject area are located within 200m radial distance.

Summary of water balance analysis (For water supply scheme only):



N/A

B.2: Pre construction Phase**Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable):**

A HBB road is passing on the east side of the sub-project which connects with Cox's bazar-Teknaf Highway. It is possible to carry the construction materials on this road to the construction site.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:

Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.

Possible location of labor camps:

Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.

Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes viii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and ix) clay are the most common type of building material used in construction.

Identification of access road for transportation (Yes/No):

A HBB road is passing on the east side of the sub-project which connects with Cox's bazar-Teknaf Highway. It is possible to carry the construction materials on this road to the construction site.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with CiC authority.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase
Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 200 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period.

Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

Around 3326.64 sq. feet land is required for the sub-project establishment.

There is reasonable vegetation around the sup-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No pre-existing drainage channel is found. Though a marshy land is found outside of the construction area, but will not be affected because of having a fair distance from the construction site and the adoption of proper construction site management practices.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase
Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

Low. The proposed multipurpose community and service center will be equipped with full facilities for conducting multipurpose services to targeted people, including separate toilets (sanitary) for male and female persons, water supply and filtration, storage and other facilities. No fecal sludge will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be produced in a typical day and higher amount of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC

authority should be made aware of this separation and disposal procedure.
Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation) There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.
Likely direct and indirect impacts on economic development in the project areas by the sub-project: During the operation phase, this Multipurpose Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.
Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description) No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.
Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description) There is no protected area in or around the project sites, and no known areas of ecological interest.
Activities leading to landslides, slumps, slips and other mass movements in road cuts: The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation) N/A
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: The proposed site is located inside the camp area. A HBB road is passing on the east side of the sub-project which connects with Cox's bazar-Teknaf Highway. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc. therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere.	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. - Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	students, children, animals, etc.)		• Proper covering of dust producing materials with polythene sheet, • Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. • Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is Medium	• Water spraying at the demolition site • Fencing / Installing barriers should be shield from dust and aggregates • Avoid usage of machines/equipment with extra noise; • Do not accumulate and burn waste at the site • Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders • It needs to Identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- Make mandatory the use of safety gears (helmets, safety belts, masks, gloves and boot) by workers depending on nature of work. - Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.			
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	Under the sub-project intervention, the overall score is low.	- Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. - Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. - Provision of waste bins/ cans, where	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity; Waste disposal record.	Prior to the start of Construction works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times.			
	Accidents	Under the sub-project intervention, the overall score is low.	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. - Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc. should be available in the site during construction period.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score is	Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage.	Contractor, environmental specialist of D&SC	Number of complaints from stakeholders,	Daily



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
		low.	- Involve the community in planning the work program so that any particularly noisy or otherwise invasive activities can be scheduled to avoid sensitive times. - Avoid using of construction equipment producing excessive noise at school time & at night. - Ear protection devices for the workers & site staffs should be available in site during construction period.		Use of silencers in noise producing equipment and sound barriers, Noise Level following decibel meter (dB)	
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation	Under the sub-project intervention, the overall score is low.	- Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. - Use tarpaulins to cover soils, sand and other loose material when transported by trucks. - Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free. - Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). - Limiting speed of construction vehicles in work sites to maximum of 20 km/h.	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution control devices,	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	measures.		Regular monitoring of air quality.		Maintain records	
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	- Prohibit employees from cutting of trees for firewood. - If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. - Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	- Prevent excessive noise; - Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); - No fires permitted on site except if needed for the construction works; - Staff must be trained up for operating equipment, - Availability and access to first-aid equipment and medical supplies. - Ensure the presence and use of safety gear at site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets, Uniforms etc., - Ensure adequate supply of drinking water.	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at project location;	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Sanitation facilities for male & female workers separately.			
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - All affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; - All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; - The contractor must arrange the cancellation of all temporary services;	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works
	Odor& waste disposal	Under the issue the overall score is low.	Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and PMU	Complaints from communities	Site inspection daily / weekly basis.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Vegetation	Under the issue the overall score is low.	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions;	Over the completion of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turfing, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required. Mention some recommendation on E&S assessment ESMP*

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.

**Appendix-2****Environmental and Social Management Plan (ESMP) of this Sub project (site specific)**

ESMP for Construction of 22 nos. Multipurpose Community and Service Center Steel Frame Building (LGED/EMCRP-W4): MPSC of Rohingya Camp-12, Block-J16

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	- Selected site will be far away from any water bodies or natural flow path to avoid the flash flood or any kind or surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.	PIU & Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	- Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. - It will be ensured that proper training and guidance are provided on general and occupational health and safety to	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Contractors' personnel and labors forces, and records of training sessions are to be kept on site. All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling.	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Adequate facilities ensuring sanitation for labor camps will be put in place. - Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labour forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation,	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared time to time for all types of work activities on site. - Proper walkways will be prepared for students and teachers in existing school boundary. - Proper Signpost at any slippery areas will be ensured in	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	mobile plant and vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	construction site. - Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration.		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Adequate quantities of drinking water will be available at all Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation &	Maintenance of assets,	Periodic maintenance of building structures, plumbing,	The party CiC	UNO, Upazila



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Maintenance	properties and equipment	water filtering and electric equipment has to be carried out. - Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.	find fit	Chairman of Upazila Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.



- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.
- Kitchen space disassembling must be treated with same level of accuracy and caution.
- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.

For wastes generated from construction and demobilization debris:

- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.



- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.
- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site;
- Burning of any type of wastes in the construction site shall be prohibited completely.

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Appendix-3

Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 20,000	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles	LS	LS @ Tk 30,000	30,000
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	2 nos.	@10,000 each	20,000
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as	2 no.	LS @ Tk. 30,000	60,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.			
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. The Safeguard personnel will take duty for 11 sites, so one-eleventh of the personnel cost is counted here.	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months (1/11 one site). (Net payment excluding Tax & VAT)	57,272.73
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73

**Cost of H&S Measures under COVID 19 Situations**

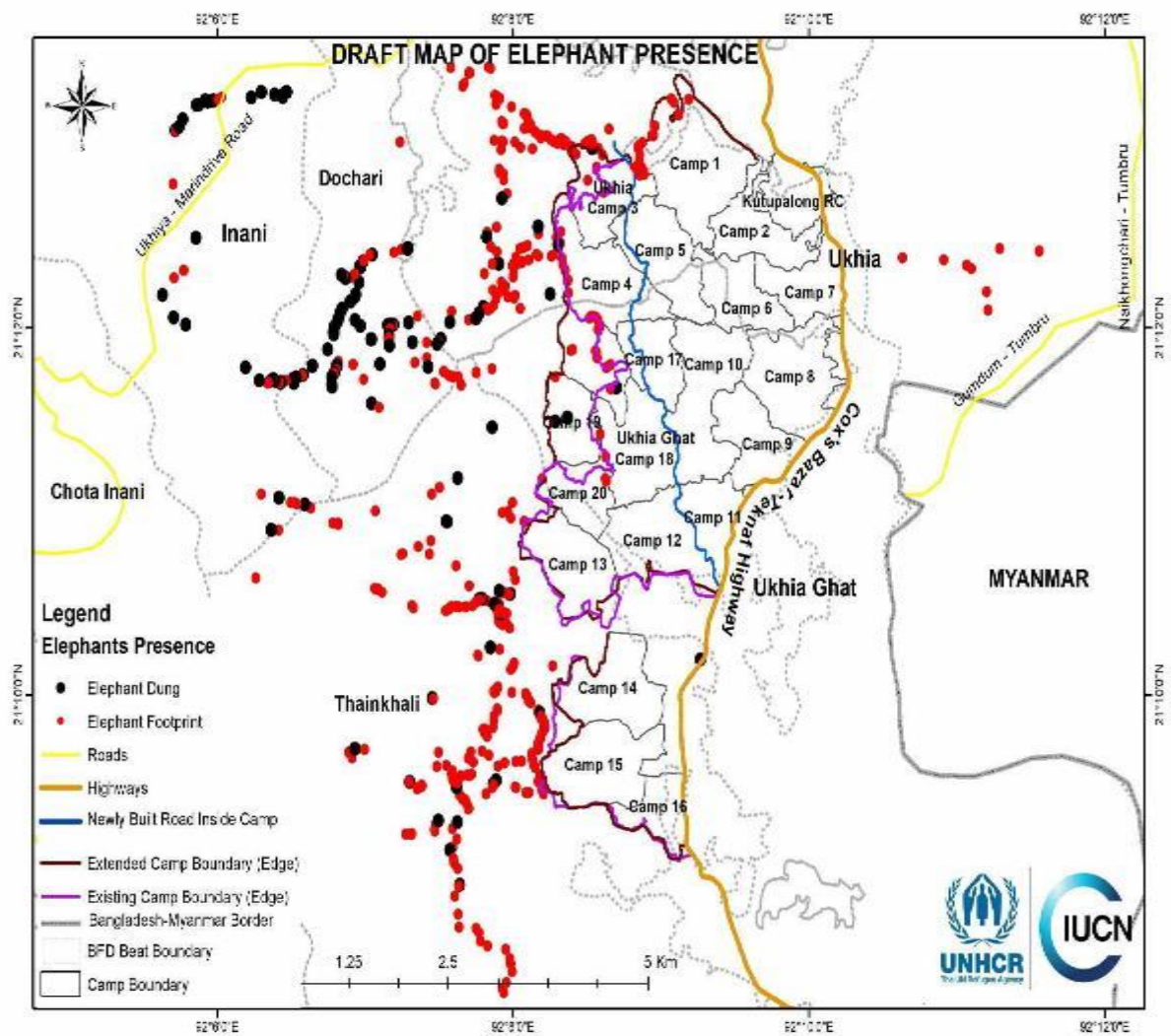
Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for	2 bottles and 1 Can for each	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office



Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
	Refill)	site						
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						165,125.00	

Appendix-4



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

Safeguard Screening of Women Friendly Space

Public Consultation Participants List

Focus Group Discussion

সময় : ০৩:৪৫

উপ-গ্রন্থক/কমপেনেন্ট এর নাম : MPSC - Camp - 12 - Block - J16

মত বিনিময় স্থান : MPSE অফিসের ভেতর,

ইউনিট : ৫৫৫২ নারী

সংগঠন : নারী

তারিখ : 11.02.21

উপস্থাপনা : ২৭/৫/২১

অংশগ্রহণকারীদের হ্যাঁ/না (পরিচয় ও বয়স)

ক্রম নং	নাম	বয়স	পুরুষ/নারী	গ্রাম	স্বাক্ষর / উপস্থিতি
১	মহম্মদ	৫০	পুরুষ	Camp-12	মহম্মদ
২	মহম্মদ	২৪	"	"	মহম্মদ
৩	মহম্মদ	২০	"	"	মহম্মদ
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Public consultation participant list



Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762

IDA Credit No. 5561-BD



ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-13, Block-A,
Type-03

Union: Palongkhali; Upazila: Ukhiya
District: Cox's Bazar

Funded by:



Government of the People's Republic of Bangladesh & World Bank

Design and Supervision Consultancy:



Development Design Consultants Ltd.

March 2021

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department

MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank



1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Service Centers are to offer the facilities which will improve the availability.

These Multipurpose Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which are identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multipurpose Community and Service Center (MPSC) will be constructed under Palongkhali union in Rohingya camp number 13 of Ukhiya Upazila under Cox's Bazar district. The catchment area of the subproject comprises the surrounding area of Rohingya camp 13. Typical camp settlement settings of the area are no exception than other camp

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya Camp-13, Block-A
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
Owner of land	Government
Land Available (sqft.)	2400
Structural Design Option	Type-03 (Rectangular Steel Frame 2-storey building (80 feet x 42 feet 5 inches)
Catchment area	Camp-13
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	Tajnimarkhola road is available to access the site
Land acquisition	Not required
Current land condition	The location is beside army hub with no pre-existing facility. An open space.

[D&SC and Field survey, 2020]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-13; Block-A		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3326.64
Number of Floors	2	3326.64X2
Number of Class room (sq. feet)	3	each@ 11'-7" X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.

1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-13, Block-A of Ukhiya Upazila in Cox's Bazar District. The site location is relatively a high plain land and accessible through vehicles as of 10ft wide HBB road is present near the site which connects with main road. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
GPS position	21.17513°N and 92.14204° E
Distance from Upazila HQ	10 km
Nearby major road	Cox's Bazar- Teknaf highway
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2021]

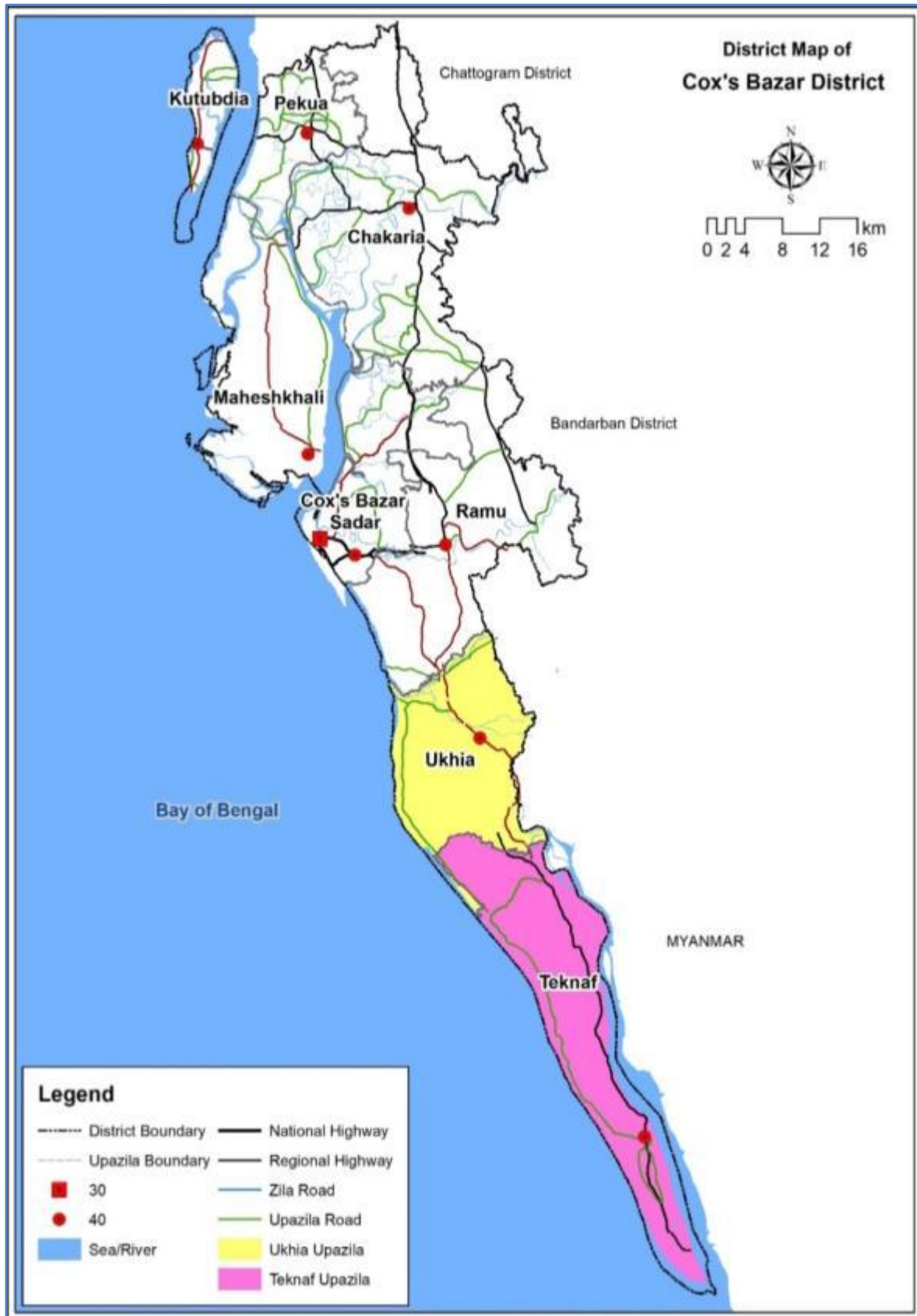


Figure 1.3.1: District Map with project location

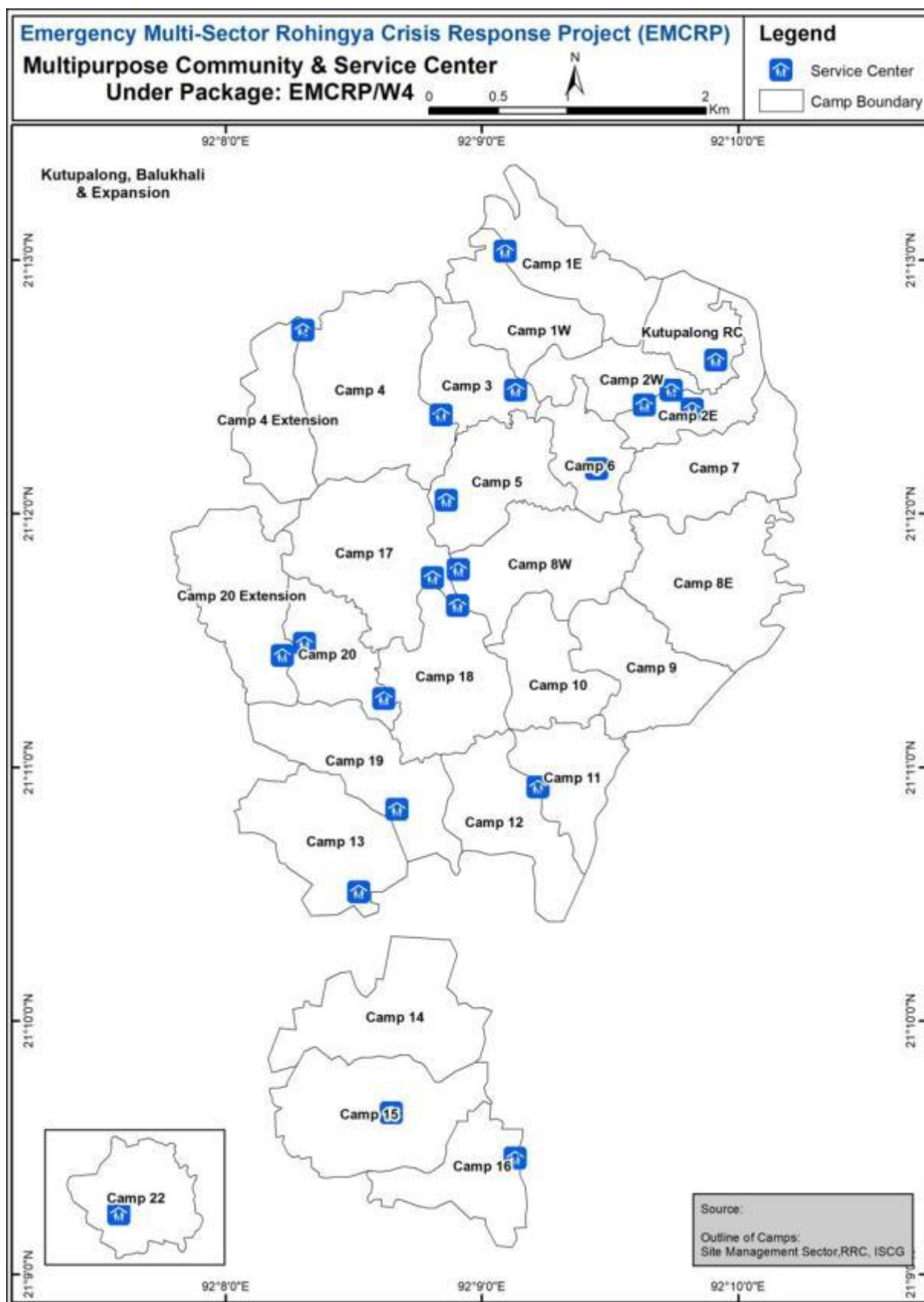


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)

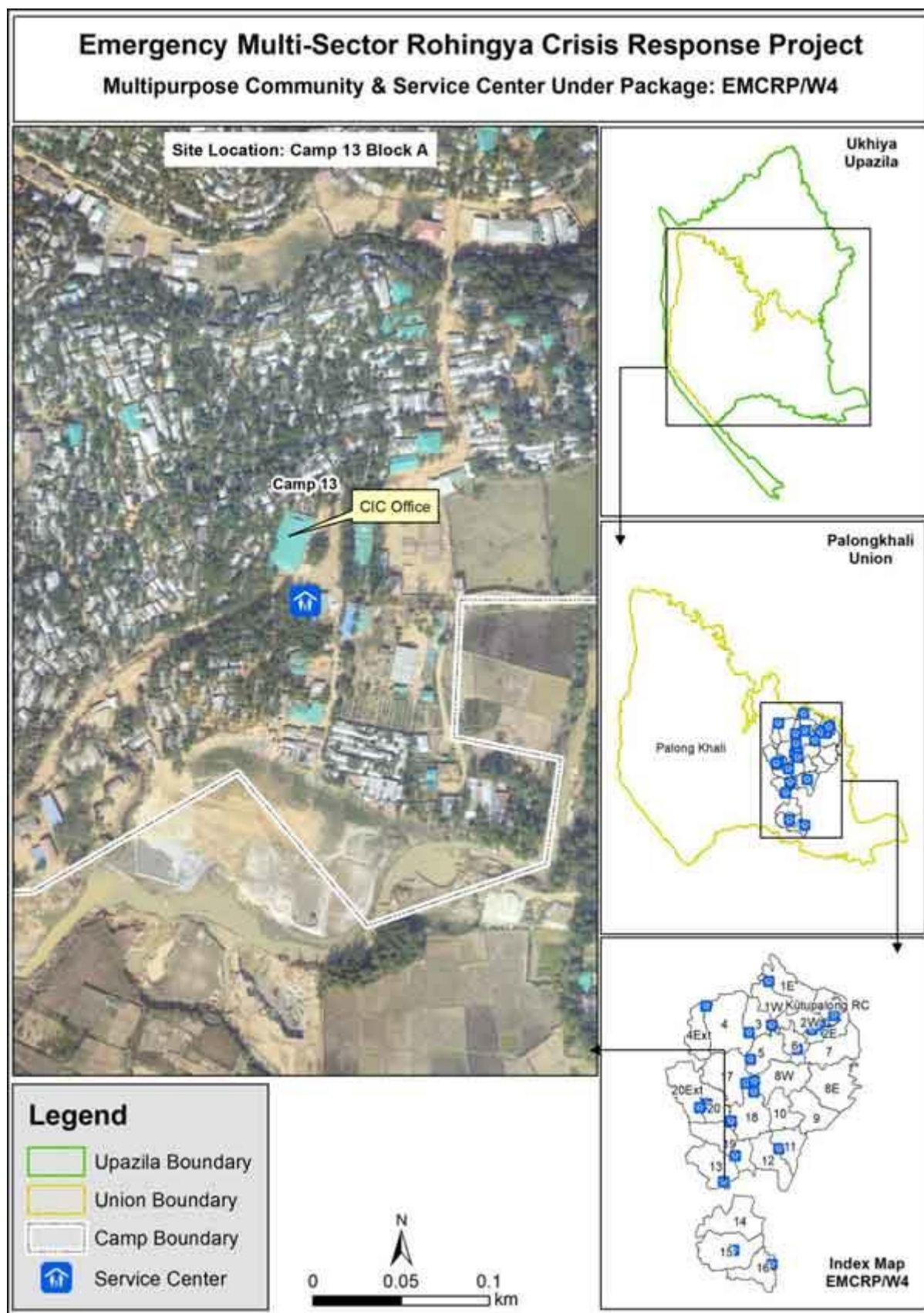


Figure 1.3.3: Union Map with Sub-project location in Camp area

1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	Brac Health Clinic (20m), Care BD Site Management Office(15m), CIC Office Camp-13(10m), Mosque(30m), Camp-13 Bazar(150m), DRPSettlements(60m)
South side	Mosque(15m), DRP Settlements(50m), Ware House(20m), Chora(60m)
East side	Police BD office Fari(20m), Medicine Distribution Center(15m), Graveyard(300m), Brick Field (100m NE), DRP Settlements (70m)
West side	Mukti Learning Center (5m), Mosque(25m), DRP Settlements (80)

[Sources of data: D&SC Field survey, 2021]



Figure 1.4.1: Present condition of the Sub-project area



Figure 1.4.2: Proposed location of MPSC construction

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 14 February 2021 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 08 persons, and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location in particular has no major complications and is in relevance with the CiC office authority currently. Present Camp in Charge has suggested to start the development works as early as possible.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Rohingya Camp 13; Block-A and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the

project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Consultation with CiC Office Authority



Consultation with DRP

Figure 2.1.1: Public Consultation Meeting in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people considered that the selected site is suitable for the construction of Multipurpose service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.
- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.

- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.
- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment. Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 14 February 2021 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected site allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. On the north side Brac Health Clinic (20m), Care BD Site Management Office(15m), CIC Office Camp-13(10m), Mosque(30m), Camp-13 Bazar(150m), Resettlements(60m); On the south side Mosque(15m), DRP Settlements(50m), Ware House(20m), Chora(60m); On the east side Police BD office Fari(20m), Medicine Distribution Center(15m), Graveyard(300m), Brick Field (100m NE), DRP

Settlements (70m); On the west side Mukti Learning Center (5m), Mosque(25m), DRP Settlements (80m).

Few disturbances to some of these establishments/features is anticipated due to construction activities for the case of not being in a sufficient distance from the construction site which is why safety measures such as, strict construction site management system- including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials et cetera should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from piling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from piling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routs and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the mitigation options, different initiatives have been undertaken, such as formation and capacity development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also,

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones, as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree plantation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones have been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tubewell in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.



4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose Community and Service Center will be constructed on a high land where some matured vegetation is found. Due to the construction activities of this Sub-project, 3-5 nos. of trees (small and medium size) will be cut down and as a mitigation measure, 10 nos. of trees will be replanted in the target location. Further, some settlements of sub-project area might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall effects for this proposed construction works are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of

consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.
- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.
- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures

of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures are being realized over time. A comprehensive monitoring framework is suggested in Project ESMP and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguard specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors

cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.



- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.

Appendix-1**Environmental Screening Form**

Sub-Project Description Form: (MPSC of Rohingya camp-13, Block-A)

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Ukhiya

Union: Palongkhali

Name of Community/Local Area: Palongkhali, Rohingya Camp-13

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose community and Service Center Steel Frame 2-storey building will be constructed within target location.

Estimated footprint / land area for this sub-project is 3326.64 sq. feet

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.): Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified location on Rohingya camp area. On the north side Brac Health Clinic (20m), Care BD Site Management Office(15m), CIC Office Camp-13(10m), Mosque(30m), Camp-13 Bazar(150m),DRPSettlements(60m); On the south side Mosque(15m), DRP Settlements(50m), Ware House(20m), Chora(60m); On the east side Police BD office Fari(20m), Medicine Distribution Center(15m), Graveyard(300m), Brick Field (100m NE), DRP Settlements (70m); On the west side Mukti Learning Center (5m), Mosque(25m), DRP Settlements (80m). Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to demolition of an old building and later construction of a new building on the same place. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic. Human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified. On the north side Brac Health Clinic (20m), Care BD Site Management Office(15m), CIC Office Camp-13(10m), Mosque(30m), Camp-13 Bazar(150m), DRP Settlements(60m); On the south side Mosque(15m), DRP Settlements(50m), Ware House(20m), Chora(60m); On the east side Police BD office Fari(20m), Medicine Distribution Center(15m), Graveyard(300m), Brick Field (100m NE), DRP Settlements (70m); On the west side Mukti Learning Center (5m), Mosque(25m), DRP Settlements (80m) are present on the surrounding target area.

Some degree of disturbance is anticipated due to construction activities to those components since they are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration route is present nearly 2 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 03. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

Sub-project Location:

The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district. The sub-project area is located at 21.17513° N and 92.14204° E. The distance from the Upazila headquarter is about 10 km. Nearby major road is Cox's Bazar- Teknaf highway.

Land ownership

Land is owned by Government.

Expected construction period: 18 (Eighteen months)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

Project intervention area is found to be an open space, but influence area should consider nearly half a kilometer radius around the proposed site. There is an army hub located on the east side.

On the north side Brac Health Clinic (20m), Care BD Site Management Office(15m), CIC Office Camp-13(10m), Mosque(30m), Camp-13 Bazar(150m), DRPSettlements(60m); On the south side Mosque(15m), DRP Settlements(50m), Ware House(20m), Chora(60m); On the east side Police BD office Fari(20m), Medicine Distribution Center(15m), Graveyard(300m), Brick Field (100m NE), DRP Settlements (70m); On the west side Mukti Learning Center (5m), Mosque(25m), DRP Settlements (80m) but there is no chance to disturbance during this construction activity.

But there is no scope to be affected by the construction activities. Other than few trees, no structures, trees and livelihood will be affected by this construction activity. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby.

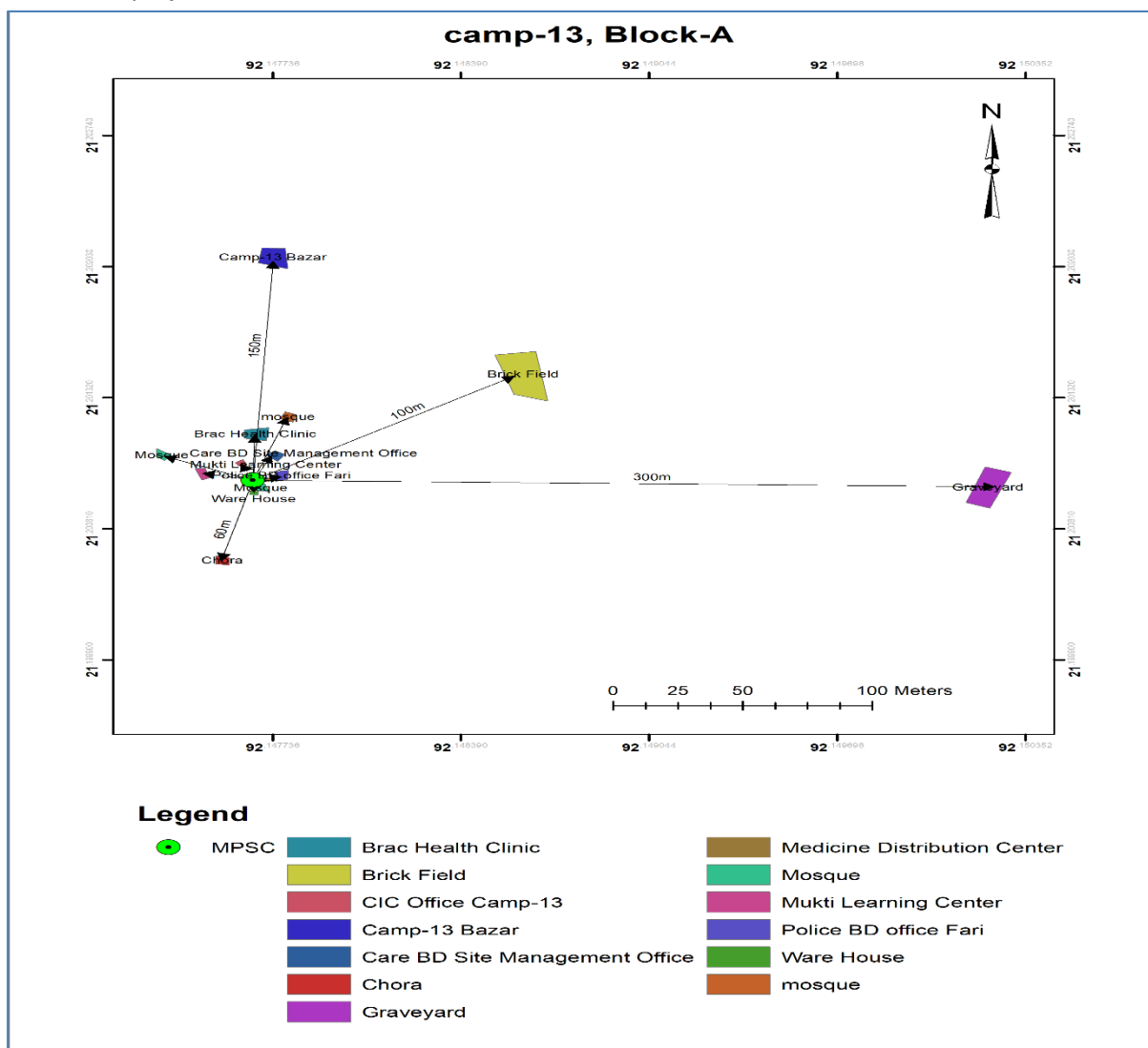
Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

Section B: Environmental Screening
B.1: Environmental feature of sub-project location
Description of cultural properties (if applicable, including distance from site):
Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

On the north side Brac Health Clinic (20m), Care BD Site Management Office(15m), CIC Office Camp-13(10m), Mosque(30m), Camp-13 Bazar(150m), DRPSettlements(60m); On the south side Mosque(15m), DRP Settlements(50m), Ware House(20m), Chora(60m); On the east side Police BD office Fari(20m), Medicine Distribution Center(15m), Graveyard(300m), Brick Field (100m NE), DRP Settlements (70m); On the west side Mukti Learning Center (5m), Mosque(25m), DRP Settlements

(80m)

There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.



Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. Several mosques, learning center and NGO offices were found during the survey. Those will not be affected by the construction works, as the activities will be carried out within the existing selected boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

(1) Within/near Elephant Migration Routes Yes/No*

There is no existence of Elephant corridor/ route now, which have been checked on the basis of elephant migration route map established by UNHCR/IUCN (latest updated maps as of 22 February 2018 and later June 05, 2018).

(2) potential impacts on remaining forests in/around camps Yes/No

N/A (This activity will be ensured in DRP community and within existing camp boundary)

(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:
Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation):

N/A (the sub-project will be constructed in a plain land and within an identified camp boundary)

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 800 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2019). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to



681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)
Status of wildlife movement:
N/A (None of the information was found about the wildlife movement in or across the area)
State of forestation:
Patches of vegetation containing large and matured trees across the road side of the proposed subproject area are located within 200m radial distance.
Summary of water balance analysis (For water supply scheme only):
N/A

B.2: Pre construction Phase

Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable):
Tajnimarkhola road connecting to camp-13 is available. It is possible to carry the construction materials on this road to the construction site.
Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:
Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.
Possible location of labor camps:
Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.
Requirement and type of raw materials (e.g. sand, stone, wood, etc.):
i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes vii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and viii) clay are the most common type of building material used in construction.
Identification of access road for transportation (Yes/No):
Tajnimarkhola road connecting to camp-13 is available. It is possible to carry the construction materials on this road to the construction site.
Location identification for raw material storage:
Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with CiC authority.
Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from

old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase
Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 200 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period.

Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

Around 3326.64 sq. feet land is required for the sub-project establishment.

There is reasonable vegetation around the sup-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No pre-existing drainage channel is found. Though a marshy land is found outside of the construction area, but will not be affected because of having a fair distance from the construction



site and the adoption of proper construction site management practices.
Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description) Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.
Activities that can lead to landslides, slumps, slips and other mass movements in road cuts: The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description) N/A
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles: During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.
Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description) There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.
Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description) Low. The proposed multipurpose community and service center will be equipped with full facilities

for conducting multipurpose services to targeted people, including separate toilets (sanitary) for male and female persons, water supply and filtration, storage and other facilities. No fecal sludge will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be produced in a typical day and higher number of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC authority should be made aware of this separation and disposal procedure.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

During the operation phase, this Multipurpose Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There is no protected area in or around the project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:



The proposed site is located inside the camp area. A BC road connects the sites with main road. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc. therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere.	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. - Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC. - Proper covering of dust producing materials	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	students, children, animals, etc.)		with polythene sheet, • Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. • Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is Low	• Water spraying at the demolition site • Fencing / Installing barriers should be shield from dust and aggregates • Avoid usage of machines/equipment with extra noise; • Do not accumulate and burn waste at the site • Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders • It needs to Identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies • Make mandatory the use of safety gears	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			(helmets, safety belts, masks, gloves and boot) by workers depending on nature of work. Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.			
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	Under the sub-project intervention, the overall score is low.	- Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. - Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity; Waste disposal record.	Prior to the start of Construction works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times.			
	Accidents	Under the sub-project intervention, the overall score is low.	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. - Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc. should be available in the site during construction period.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score is low.	- Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage. - Involve the community in planning the work program so that any particularly noisy or	Contractor, environmental specialist of D&SC	Number of complaints from stakeholders, Use of silencers in	Daily



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			otherwise invasive activities can be scheduled to avoid sensitive times. • Avoid using of construction equipment producing excessive noise at school time & at night. • Ear protection devices for the workers & site staffs should be available in site during construction period.		noise producing equipment and sound barriers, Noise Level following decibel meter (dB)	
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by	Under the sub-project intervention, the overall score is low.	• Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. • Use tarpaulins to cover soils, sand and other loose material when transported by trucks. • Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free. • Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). • Limiting speed of construction vehicles in work sites to maximum of 20 km/h. • Regular monitoring of air quality.	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution control devices,	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	mitigation measures.				Maintain records	
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	- Prohibit employees from cutting of trees for firewood. - If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. - Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	- Prevent excessive noise; - Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); - No fires permitted on site except if needed for the construction works; - Staff must be trained up for operating equipment, - Availability and access to first-aid equipment and medical supplies. - Ensure the presence and use of safety gear at	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at project	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets, Uniforms etc., - Ensure adequate supply of drinking water. - Sanitation facilities for male & female workers separately.		location;	
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - All affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; - All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; - The contractor must arrange the cancellation of all temporary services;	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works
	Odor& waste disposal	Under the issue the overall score is low.	Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and	Complaints from communities	Site inspection daily /



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
				PMU		weekly basis.
	Vegetation	Under the issue the overall score is low.	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions;	Over the completion of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turfing, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required. Mention some recommendation on E&S assessment ESMP*

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.



Appendix-2

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Construction of 22 Multipurpose Community and Service Center Steel Frame Building (LGED/EMCRP-W4): MPSC of Rohingya Camp-13, Block-A

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of	Selected site will be far away from any water bodies or	PIU & Contractor	Environmental Consultant of PIU,



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	natural drainage	natural flow path to avoid the flash flood or any kind or surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.		PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	- Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. - It will be ensured that proper training and guidance are provided on general and occupational health and safety to Contractors' personnel and labors forces, and records of	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		training sessions are to be kept on site. All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. - Adequate facilities ensuring sanitation for labor camps will	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		be put in place. - Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labour forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared time to time for all types of work activities on site. - Proper walkways will be prepared for students and teachers in existing school boundary. - Proper Signpost at any slippery areas will be ensured in construction site.	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. - Adequate quantities of drinking water will be available at all		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Maintenance of assets, properties and	Periodic maintenance of building structures, plumbing, water filtering and electric equipment has to be carried out.	The party CiC find fit	UNO, Upazila Chairman of Upazila



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	equipment	- Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.		Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.
- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.
- Kitchen space disassembling must be treated with same level of accuracy and caution.



- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.

For wastes generated from construction and demobilization debris:

- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.
- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.



- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site;
- Burning of any type of wastes in the construction site shall be prohibited completely.

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Appendix-3

Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 20,000	20,000
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal	LS	LS @ Tk 30,000	30,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles			
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	2 nos.	@10,000 each	20,000
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all	2 no.	LS @ Tk. 30,000	60,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	complete as per satisfaction and direction of the Engineer-in-charge.			
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. The Safeguard personnel will take duty for 11 sites, so one-eleventh of the personnel cost is counted here.	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months (1/11 one site). (Net payment excluding Tax & VAT)	57,272.73
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73



Cost of H&S Measures under COVID 19 Situations

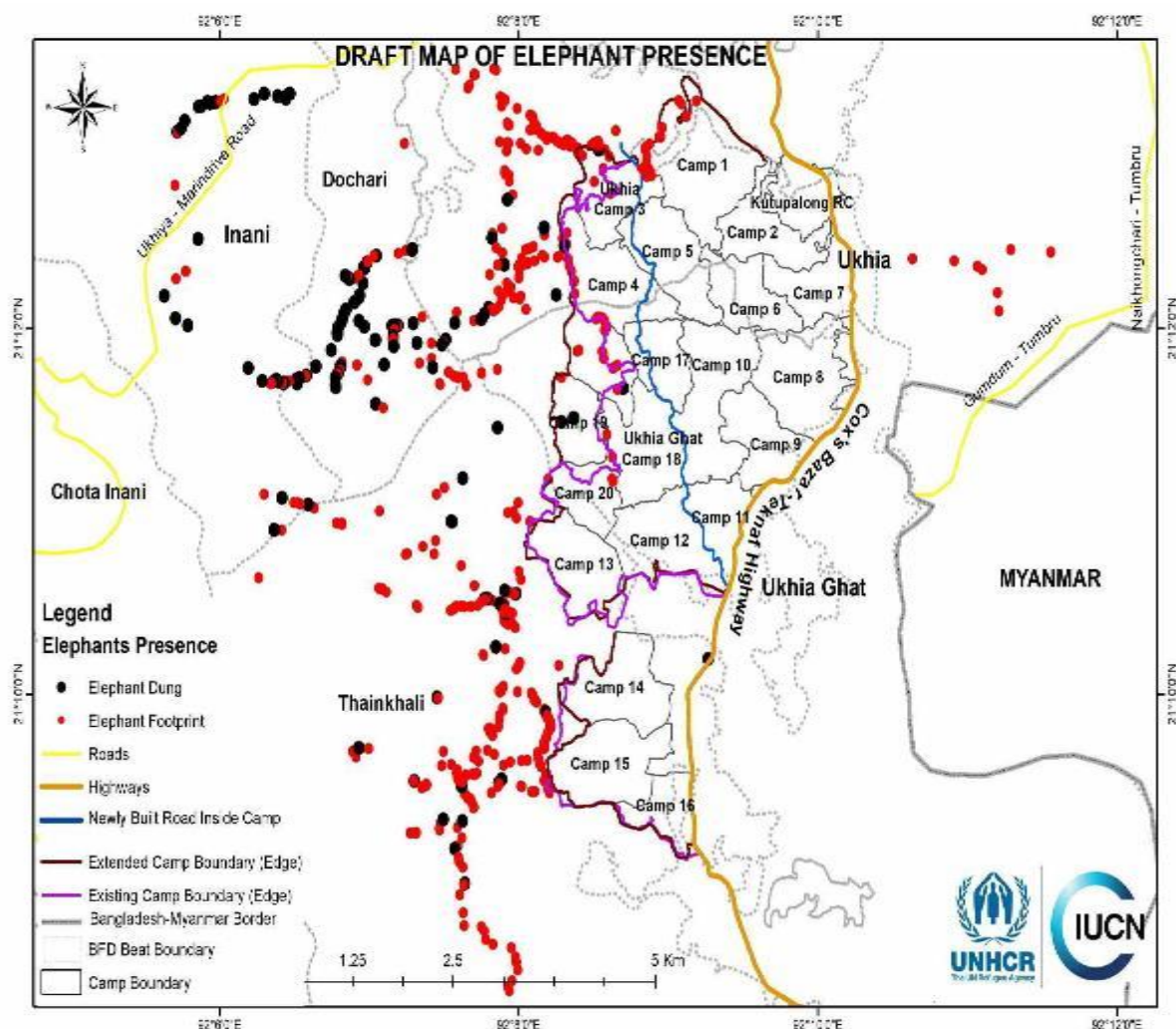
Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for	2 bottles and 1 Can for each	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office



Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
	Refill)	site						
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						165,125.00	

Appendix-4



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

[illegible]

Public consultation participant list



Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762

IDA Credit No. 5561-BD



ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-15, Block-E1,
Type-02

Union: Palongkhali; Upazila: Ukhiya
District: Cox's Bazar

Funded by:



Government of the People's Republic of Bangladesh & World Bank

Design and Supervision Consultancy:



Development Design Consultants Ltd.

March 2021

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department

MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank



1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Service Centers are to offer the facilities which will improve the availability.

These Multipurpose Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which are identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multipurpose Community and Service Center (MPSC) will be constructed under Palongkhali union in Rohingya camp number 15 under Block number E1 of Ukhiya Upazila under Cox's Bazar district. The catchment area of the subproject comprises the surrounding area of Rohingya camp 15. Typical camp settlement settings of the area are no

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

exception than other camp locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya Camp-15, Block-E1
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
Owner of land	Government
Land Available (sqft.)	6000
Structural Design Option	Type-02 (Rectangular Steel Frame 2-storey building (90 feet x 42 feet 5 inches)
Catchment area	Camp-15
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	Cox's bazar-Teknaf Highway to Camp-15 Road
Land acquisition	Not required
Current land condition	Open space used as playground

[D&SC and Field survey, 2020]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-15; Block-E1		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3742.47
Number of Floors	2	3742.47x2 Floors
Number of Class room (sq. feet)	3	each@ 14'-11" X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.

1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-15, Block-E1 of Ukhiya Upazila in Cox's Bazar District. The site location is relatively a high plain land and accessible through vehicles as of wide HBB road is present near the site which does not connect with any main road directly but is accessible. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
GPS position	21.16068° N and 92.14413° E
Distance from Upazila HQ	12 km
Nearby major road	Cox's Bazar- Teknaf highway
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2021]

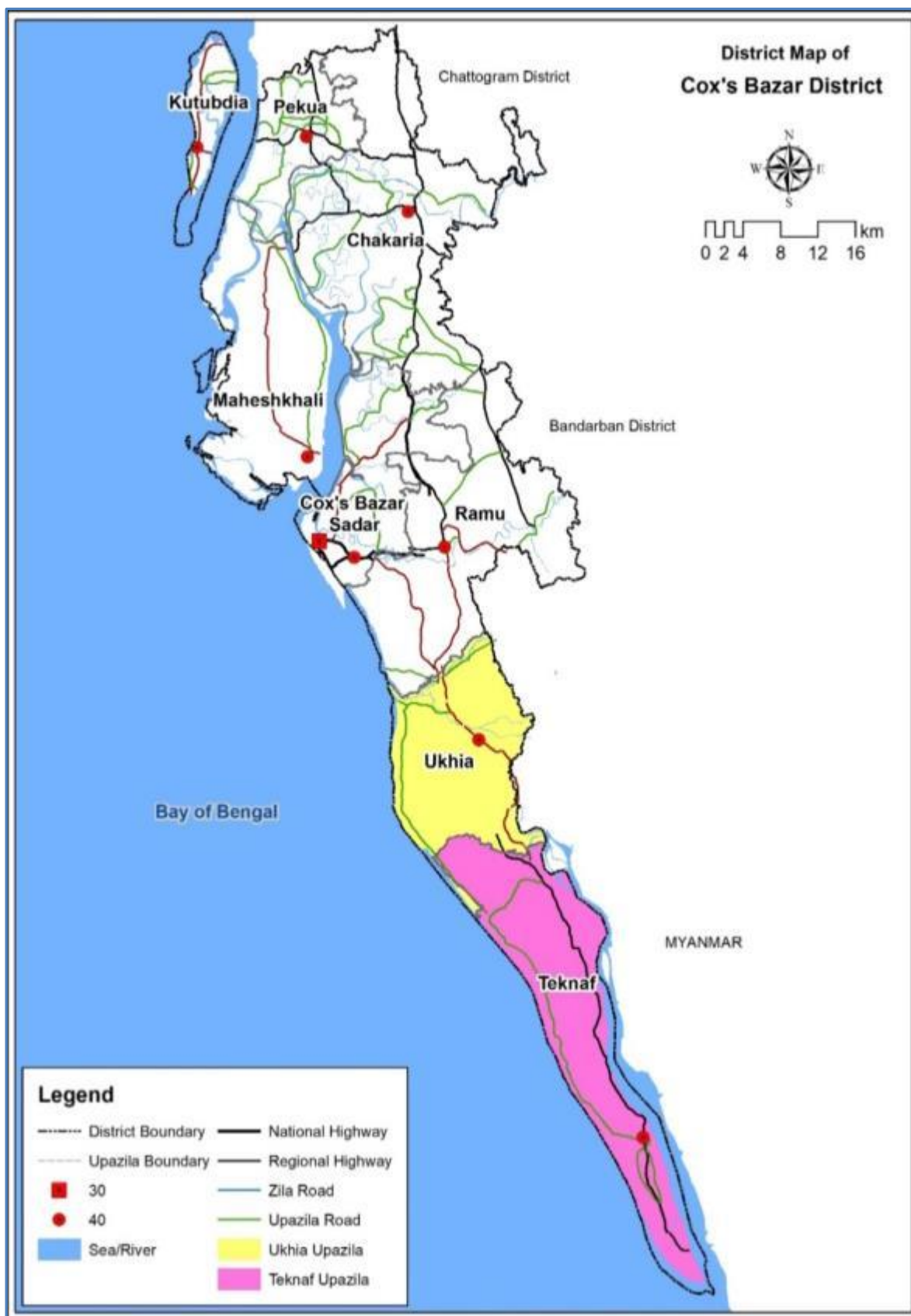


Figure 1.3.1: District Map with project location

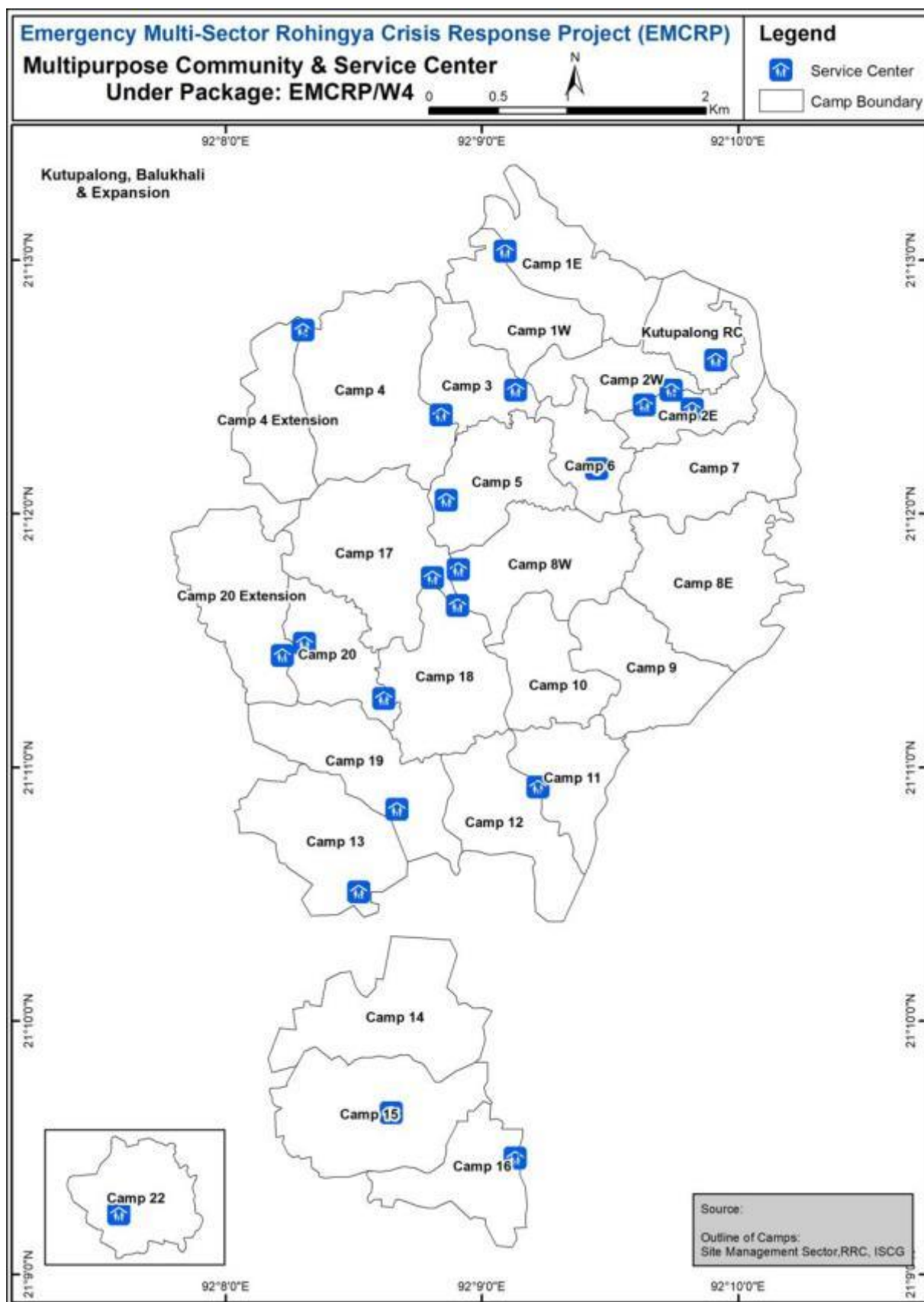


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)

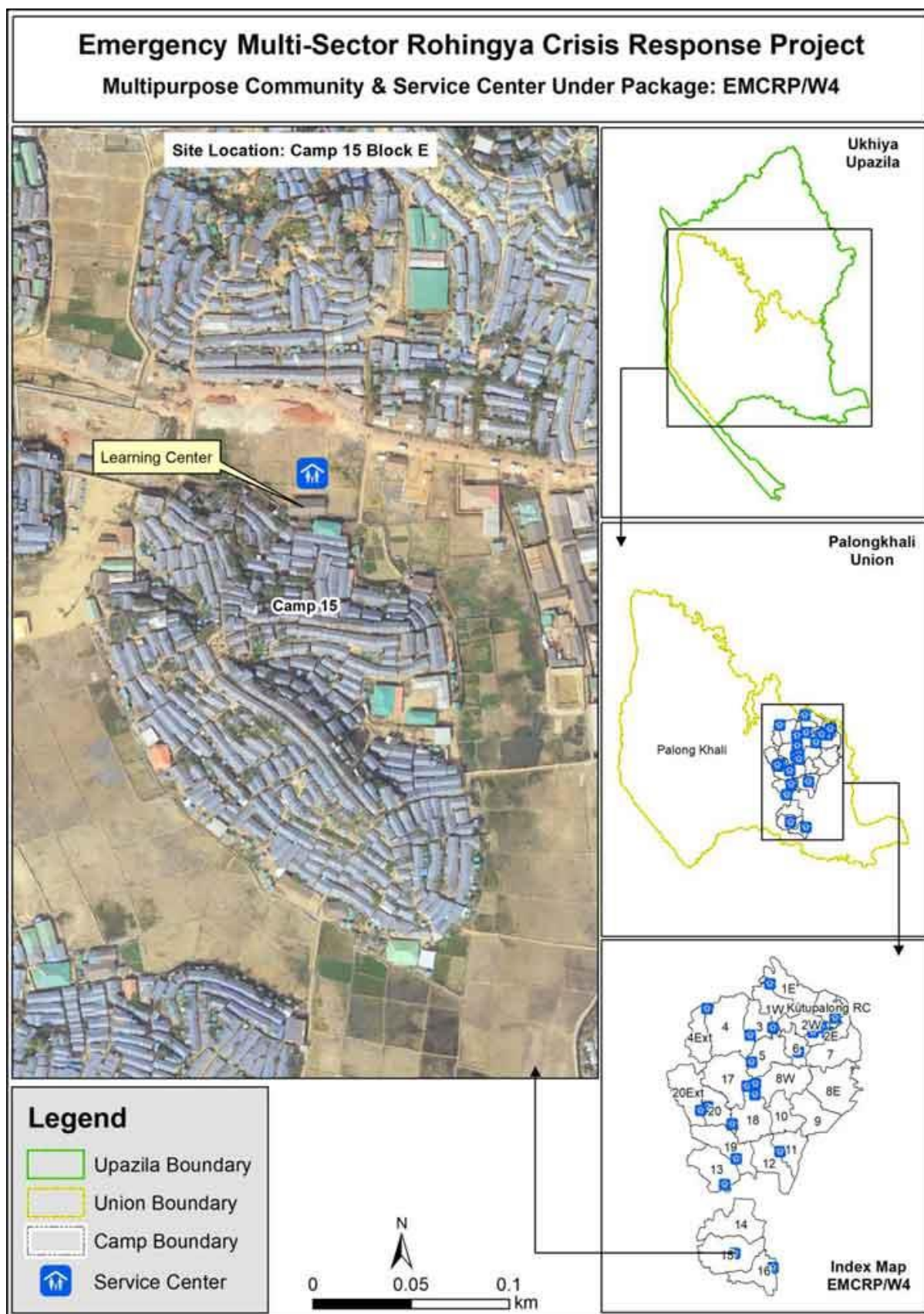


Figure 1.3.3: Union Map with Sub-project location in Camp area

1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	Mosque(50m), Mosque(80m), Brac School(450m), Madrassa(100m)
South side	Mosque(10m), Shushilan School(20mSW), Mosque(400m), Codec Learning Center(500m), GCF School(500m)
East side	Brac School(20m), DCA Office(25m), Mosque(70m), Brac Learning Center (100m SE)
West side	Mosque(50m), Brac School(40m), WFP Distribution Center(60m), Graveyard(450m), World Vision Clinic(480m), Madrassa(400m)

[Sources of data: D&SC Field survey, 2021]



Figure 1.4.1: Present condition of the Sub-project area



Figure 1.4.2: Proposed location of MPSC construction

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 15 February 2021 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 18 persons, and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location in particular has no major complications and is in relevance with the CiC office authority currently.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Rohingya Camp 15; Block-E1 and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Consultation with CiC Office Authority



Consultation with DRP

Figure 2.1.1: Public Consultation Meeting in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people considered that the selected site is suitable for the construction of Multipurpose service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.
- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.
- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.

- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment. Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 15 February 2021 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected sited allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. On the north Mosque(50m), Mosque(80m), Brac School(450m), Madrassa(100m); On the west Mosque(50m), Brac School(40m), WFP Distribution Center(60m), Graveyard(450m), World Vision Clinic(480m), Madrassa(400m); On the East Brac School(20m), DCA Office(25m), Mosque(70m), Brac Learning Center (100m SE) and on the south Mosque(10m), Shushilan School(20mSW), Mosque(400m), Codec Learning Center(500m), GCF School(500m). Few disturbances to some of these establishments/features is anticipated due to construction activities

for the case of not being in a sufficient distance from the construction site which is why safety measures such as, strict construction site management system- including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials et cetera should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from piling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from piling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routs and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the mitigation options, different initiatives have been undertaken, such as formation and capacity development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain.

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones, as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree planation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones have been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tubewell in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good

engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose Community and Service Center will be constructed on a high land where some matured vegetation is found. Due to the construction activities of this Sub-project, no number of trees will be cut down however the location will have enough space to plant trees for increasing vegetation. Further, some settlements on south side as mosque and shushilan learning center of sub-project area might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall effects for this proposed construction works are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with

shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.
- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.
- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social

considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures are being realized over time. A comprehensive monitoring framework is suggested in Project ESMP and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguard specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.
- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.



Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.



Appendix-1

Environmental Screening Form

Sub-Project Description Form: (MPSC of Rohingya camp-15, Block-E1)

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Ukhiya

Union: Palongkhali

Name of Community/Local Area: Palongkhali, Rohingya Camp-15

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose community and Service Center Steel Frame 2-storey building will be constructed within target location.

Estimated footprint / land area for this sub-project is 3742.47 sq. feet

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.): Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified location on Rohingya camp area. On the north Mosque(50m), Mosque(80m), Brac School(450m), Madrassa(100m); On the west Mosque(50m), Brac School(40m), WFP Distribution Center(60m), Graveyard(450m), World Vision Clinic(480m), Madrassa(400m); On the East Brac School(20m), DCA Office(25m), Mosque(70m), Brac Learning Center (100m SE) and on the south Mosque(10m), Shushilan School(20mSW), Mosque(400m), Codec Learning Center(500m), GCF School(500m). Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to demolition of an old building and later construction of a new building on the same place. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic and human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified. On the north Mosque(50m), Mosque(80m), Brac School(450m), Madrassa(100m); On the west Mosque(50m), Brac School(40m), WFP Distribution Center(60m), Graveyard(450m), World Vision Clinic(480m), Madrassa(400m); On the East Brac School(20m), DCA Office(25m), Mosque(70m), Brac Learning Center (100m SE) and on the south Mosque(10m), Shushilan School(20mSW), Mosque(400m), Codec Learning Center(500m), GCF School(500m) are present on the surrounding target area.

Some degree of disturbance is anticipated due to construction activities to those components which are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration route is present nearly 2 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 02. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

**Sub-project Location:**

The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district. The sub-project area is located at 21.160680 N and 92.14413° E. The distance from the Upazila headquarter is about 12 km. Nearby major road is Cox's Bazar- Teknaf highway.

Land ownership

Land is owned by Government.

Expected construction period: 18 (Eighteen months)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

Project intervention area is found to be an open space, but influence area should consider nearly half a kilometer radius around the proposed site. There is mosque located on the south side and a learning center on the south-west.

On the north Mosque(50m), Mosque(80m), Brac School(450m), Madrassa(100m); On the west Mosque(50m), Brac School(40m), WFP Distribution Center(60m), Graveyard(450m), World Vision Clinic(480m), Madrassa(400m); On the East Brac School(20m), DCA Office(25m), Mosque(70m), Brac Learning Center (100m SE) and on the south Mosque(10m), Shushilan School(20mSW), Mosque(400m), Codec Learning Center(500m), GCF School(500m).

But there is no scope to be affected by the construction activities. No structures, trees and livelihood will be affected by this construction activity excluding a mosque and a learning center which will need to be considered to be protected during the construction. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby.

Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

Section B: Environmental Screening**B.1: Environmental feature of sub-project location**

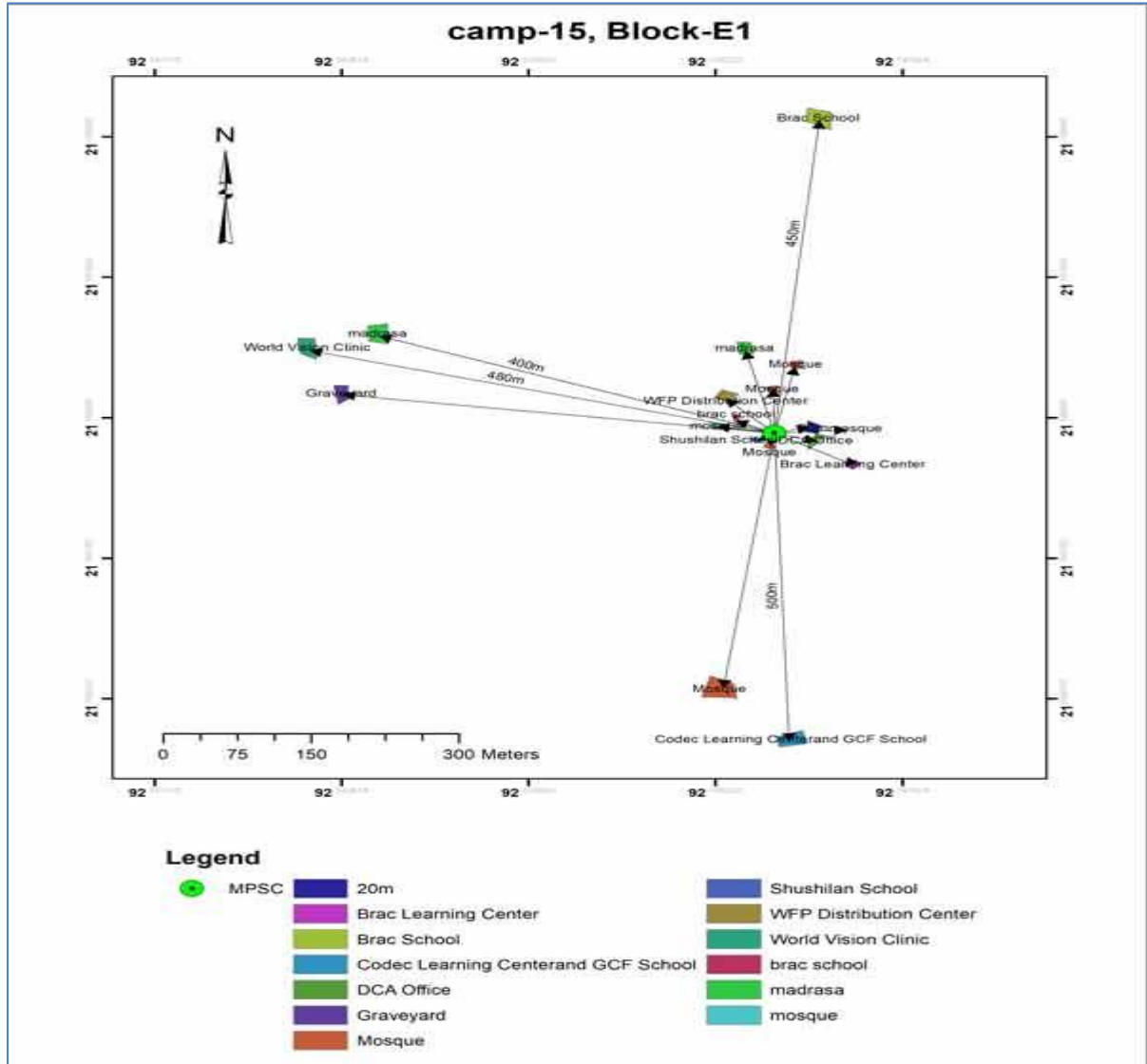
Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

On the north Mosque(50m), Mosque(80m), Brac School(450m), Madrassa(100m); On the west Mosque(50m), Brac School(40m), WFP Distribution Center(60m), Graveyard(450m), World Vision Clinic(480m), Madrassa(400m); On the East Brac School(20m), DCA Office(25m), Mosque(70m), Brac

Learning Center (100m SE) and on the south Mosque(10m), Shushilan School(20mSW), Mosque(400m), Codec Learning Center(500m), GCF School(500m).

There are no sensitive environmental, cultural, archaeological sites existing within the catchment area of this sub-project.



Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas. Several mosques, madrasa, learning center and DRP settlement were found during the survey. Those will not be affected by the construction works, as the activities will be carried out within the existing selected boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

(1) Within/near Elephant Migration Routes Yes/No*

There is no existence of Elephant corridor/ route now, which have been checked on the basis of elephant migration route map established by UNHCR/IUCN (latest updated maps as of 22 February

2018 and later June 05, 2018).

(2) potential impacts on remaining forests in/around camps Yes/No

N/A (This activity will be ensured in DRP community and within existing camp boundary).

(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:

Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation):

N/A (the sub-project will be constructed in a plain land and within an identified camp boundary)

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 800 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2019). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)
Status of wildlife movement:
N/A (None of the information was found about the wildlife movement in or across the area)
State of forestation:
Patches of vegetation containing large and matured trees across the road side of the proposed subproject area are located within 200m radial distance.
Summary of water balance analysis (For water supply scheme only):
N/A

B.2: Pre construction Phase

Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable):
Cox's Bazar-Teknaf highway to camp-15 road is available. It is possible to carry the construction materials on this road to the construction site.
Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:
Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.
Possible location of labor camps:
Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.
Requirement and type of raw materials (e.g. sand, stone, wood, etc.):
i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes viii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and ix) clay are the most common type of building material used in construction.
Identification of access road for transportation (Yes/No):
Cox's Bazar-Teknaf highway to camp-15 road is available. It is possible to carry the construction materials on this road to the construction site.
Location identification for raw material storage:
Adjacent to labor camp or different location is available. However, this will need placement on open

fields and should be consulted with CiC authority.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 200 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period.

Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

Around 3,742.47 sq. feet land is required for the sub-project establishment.

There is reasonable vegetation around the sup-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No pre-existing drainage channel is found. Though a marshy land is found outside of the construction area, but will not be affected because of having a fair distance from the construction site and the adoption of proper construction site management practices.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

Low. The proposed multipurpose community and service center will be equipped with full facilities for conducting multipurpose services to targeted people, including separate toilets (sanitary) for male and female persons, water supply and filtration, storage and other facilities. No fecal sludge will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be produced in a typical day and higher amount of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC authority should be made aware of this separation and disposal procedure.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

During the operation phase, this Multipurpose Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There is no protected area in or around the project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:



The proposed site is located inside the camp area. A HBB road connects the sites with main road which resides in camp 15. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc. therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere.	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. - Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC. - Proper covering of dust producing materials	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	students, children, animals, etc.)		with polythene sheet, • Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. • Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is Low	• No demolition work is needed for this project. • Other than few clearing and leveling works, no additional work is needed.	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	Under the sub-project intervention, the overall score is low.	• Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. • No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. • Under no circumstances may open areas or the surrounding bushes be used as a toilet facility.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity; Waste disposal	Prior to the start of Construction works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times.		record.	
	Accidents	Under the sub-project intervention, the overall score is low.	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. - Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			should be available in the site during construction period.			
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score is low.	- Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage. - Involve the community in planning the work program so that any particularly noisy or otherwise invasive activities can be scheduled to avoid sensitive times. - Avoid using of construction equipment producing excessive noise at school time & at night. - Ear protection devices for the workers & site staffs should be available in site during construction period.	Contractor, environmental specialist of D&SC	Number of complaints from stakeholders, Use of silencers in noise producing equipment and sound barriers, Noise Level following decibel meter (dB)	Daily
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related	Under the sub-project intervention, the overall score is low.	- Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. - Use tarpaulins to cover soils, sand and other loose material when transported by trucks. - Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free.	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.		- Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). - Limiting speed of construction vehicles in work sites to maximum of 20 km/h. - Regular monitoring of air quality.		complaints from sensitive receptors, Heavy equipment and pollution control devices, Maintain records	
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	- Prohibit employees from cutting of trees for firewood. - If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. - Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	- Prevent excessive noise; - Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); - No fires permitted on site except if needed	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			for the construction works; • Staff must be trained up for operating equipment, • Availability and access to first-aid equipment and medical supplies. • Ensure the presence and use of safety gear at site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets, Uniforms etc., • Ensure adequate supply of drinking water. • Sanitation facilities for male & female workers separately.		walkways signage, and metal sheets placed at project location;	
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	• Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; • All affected structures rehabilitated/compensated; • The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; • All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document;	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			The contractor must arrange the cancellation of all temporary services;			
	Odor& waste disposal	Under the issue the overall score is low.	Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and PMU	Complaints from communities	Site inspection daily / weekly basis.
	Vegetation	Under the issue the overall score is low.	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions;	Over the completion of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turfing, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required. Mention some recommendation on E&S assessment ESMP*

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.



Appendix-2

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Construction of 22 nos. Multipurpose Service Center Steel Frame Building (LGED/EMCRP-W4): MPSC of Rohingya Camp-15, Block-E1

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of	Selected site will be far away from any water bodies or	PIU & Contractor	Environmental Consultant of PIU,



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	natural drainage	natural flow path to avoid the flash flood or any kind or surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.		PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	- Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. - It will be ensured that proper training and guidance are provided on general and occupational health and safety to Contractors' personnel and labors forces, and records of	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		training sessions are to be kept on site. All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. - Adequate facilities ensuring sanitation for labor camps will	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		be put in place. - Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labour forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared time to time for all types of work activities on site. - Proper walkways will be prepared for students and teachers in existing school boundary. - Proper Signpost at any slippery areas will be ensured in construction site.	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. - Adequate quantities of drinking water will be available at all		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Maintenance of assets, properties and	Periodic maintenance of building structures, plumbing, water filtering and electric equipment has to be carried out.	The party CiC find fit	UNO, Upazila Chairman of Upazila



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	equipment	- Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.		Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.
- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.



- Kitchen space disassembling must be treated with same level of accuracy and caution.
- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.

For wastes generated from construction and demobilization debris:

- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.
- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.



- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site;
- Burning of any type of wastes in the construction site shall be prohibited completely.

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Appendix-3

Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

SI no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 20,000	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles	LS	LS @ Tk 30,000	30,000
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	2 nos.	@10,000 each	20,000
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means	2 no.	LS @ Tk. 30,000	60,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.			
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. The Safeguard personnel will take duty for 11 sites, so one-eleventh of the personnel cost is counted here.	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months (1/11 one site). (Net payment excluding Tax & VAT)	57,272.73
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73

**Cost of H&S Measures under COVID 19 Situations**

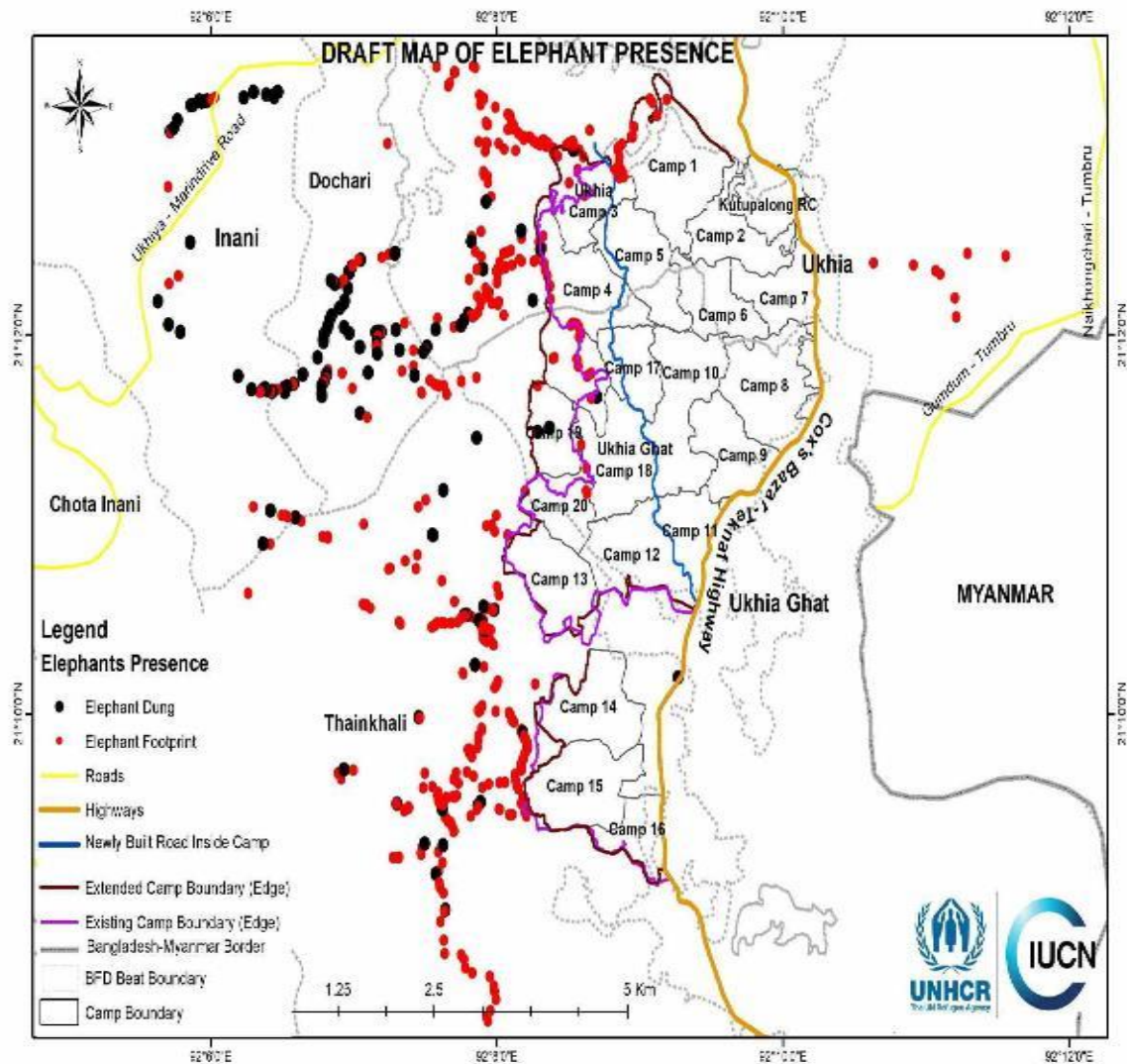
Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for	2 bottles and 1 Can for each	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office



Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
	Refill)	site						
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						165,125.00	

Appendix-4



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)					
Local Government Engineering Department (LGED)					
Public Consultation Participants List					
Focus Group Discussion					
Date: 11.03.20			Time: 10.00 AM		
In charge/Reported to: Mr. M. H. Camp-15, Block-E (E1)					
At: Camp-15, Block-E C/O Office of LGED					
Session:	Word No.:	Topic:	Duration:	Date: 11.03.20	
Total number of participants: 26					
Participant List (Name & Address)					
No.	Name	Age	Gender	Address	Signature
1	Mr. H. Camp-15	19	Male	Camp-15	Mr. H.
2	Mr. H. Camp-15	20	"	"	Mr. H.
3	Mr. H. Camp-15	20	"	"	Mr. H.
4	Mr. H. Camp-15	18	"	"	Mr. H.
5	Mr. H. Camp-15	21	"	"	Mr. H.
6	Mr. H. Camp-15	20	"	"	Mr. H.
7	Mr. H. Camp-15	21	"	"	Mr. H.
8	Mr. H. Camp-15	19	"	"	Mr. H.
9	Mr. H. Camp-15	20	"	"	Mr. H.
10	Mr. H. Camp-15	20	"	"	Mr. H.
11	Mr. H. Camp-15	21	"	"	Mr. H.
12	Mr. H. Camp-15	22	"	"	Mr. H.
13	Mr. H. Camp-15	23	"	"	Mr. H.
14	Mr. H. Camp-15	24	"	"	Mr. H.
15	Mr. H. Camp-15	25	"	"	Mr. H.
16	Mr. H. Camp-15	26	"	"	Mr. H.
17	Mr. H. Camp-15	27	"	"	Mr. H.
18	Mr. H. Camp-15	28	"	"	Mr. H.
19	Mr. H. Camp-15	29	"	"	Mr. H.
20	Mr. H. Camp-15	30	"	"	Mr. H.

Public consultation participant list



Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762

IDA Credit No. 5561-BD



ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-16, Block-A,
Type-03

Union: Palongkhali; Upazila: Ukhiya
District: Cox's Bazar

Funded by:



Government of the People's Republic of Bangladesh & World Bank

Design and Supervision Consultancy:



Development Design Consultants Ltd.

March 2021

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department

MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank



1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Service Centers are to offer the facilities which will improve the availability.

These Multipurpose Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which are identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multipurpose Community and Service Center (MPSC) will be constructed under Palongkhali union in Rohingya camp number 16 of Ukhiya Upazila under Cox's Bazar district. The catchment area of the subproject comprises the surrounding area of Rohingya camp 16. Typical camp settlement settings of the area are no exception than other camp

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya Camp-16, Block-A
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
Owner of land	Government
Land Available (sqft.)	2500
Structural Design Option	Type-03 (Rectangular Steel Frame 2-storey building (80 feet x 41 feet 7 inches)
Catchment area	Camp-16
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	Cox's Bazar-Teknaf highway is present on the north of the location in very close proximity.
Land acquisition	Not required
Current land condition	The location is an open space with no sensitive features and situated in front of the CiC office.

[D&SC and Field survey, 2021]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-16; Block-A		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3326.64
Number of Floors	2	3326.64X2
Number of Class room (sq. feet)	3	each@ 11'-7"X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.

1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-16, Block-A of Ukhiya Upazila in Cox's Bazar District. The site location is relatively a low plain land and accessible through vehicles as Cox's bazar-Teknaf highway road is present on the north of the site. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
GPS position	21.157316°N and 92.152195°E
Distance from Upazila HQ	13 km
Nearby major road	Cox's Bazar- Teknaf highway
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2021]

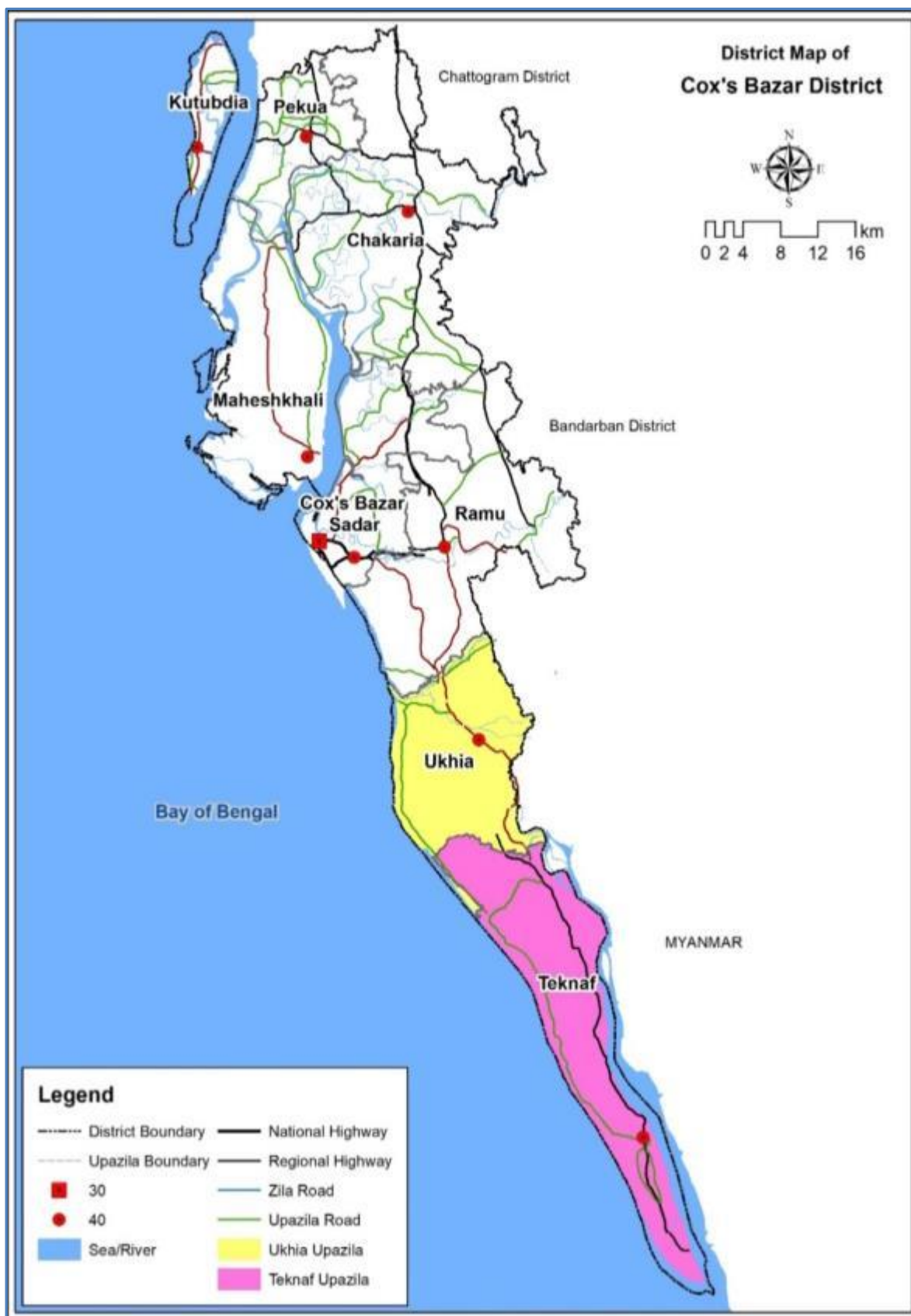


Figure 1.3.1: District Map with project location

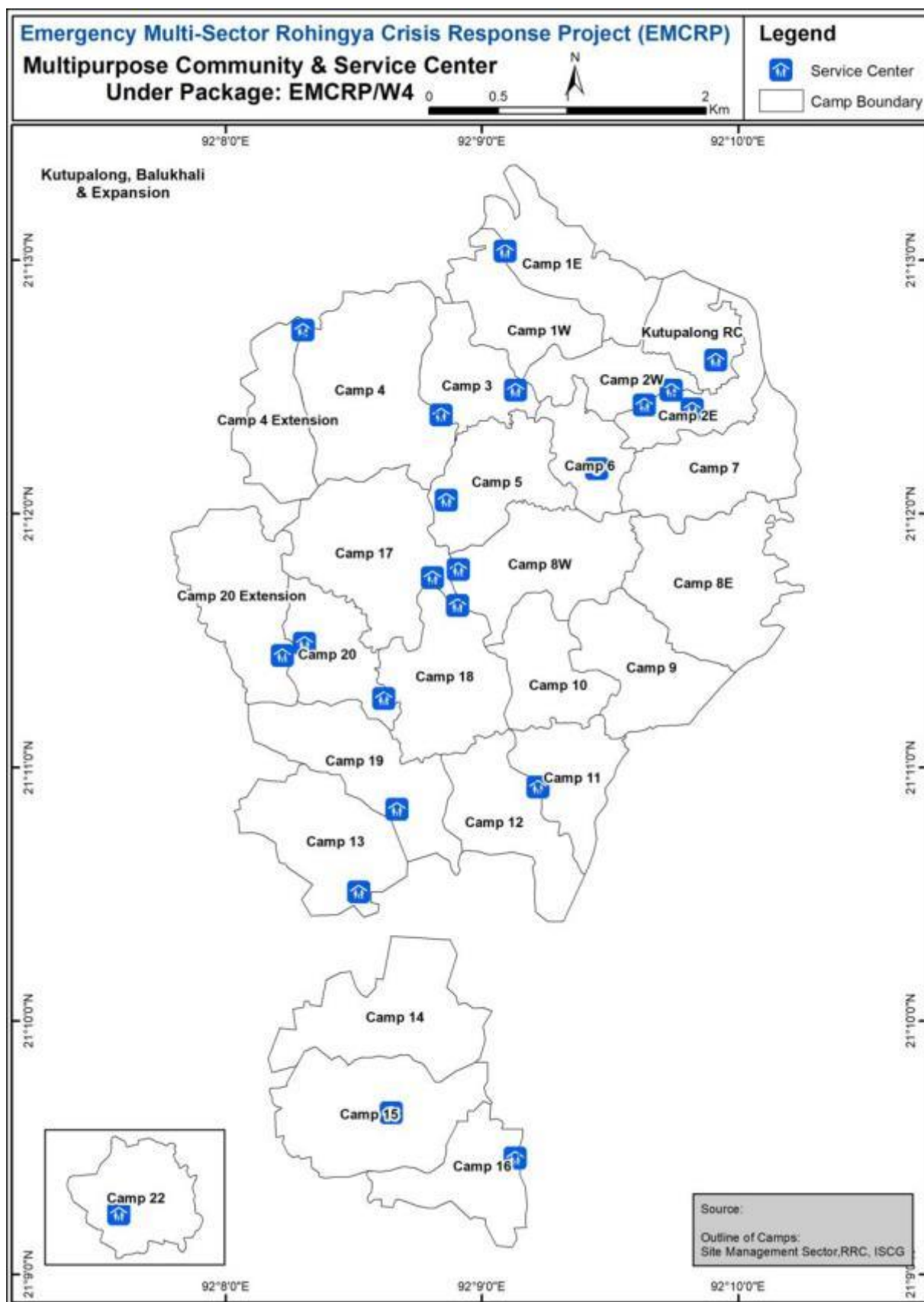


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)

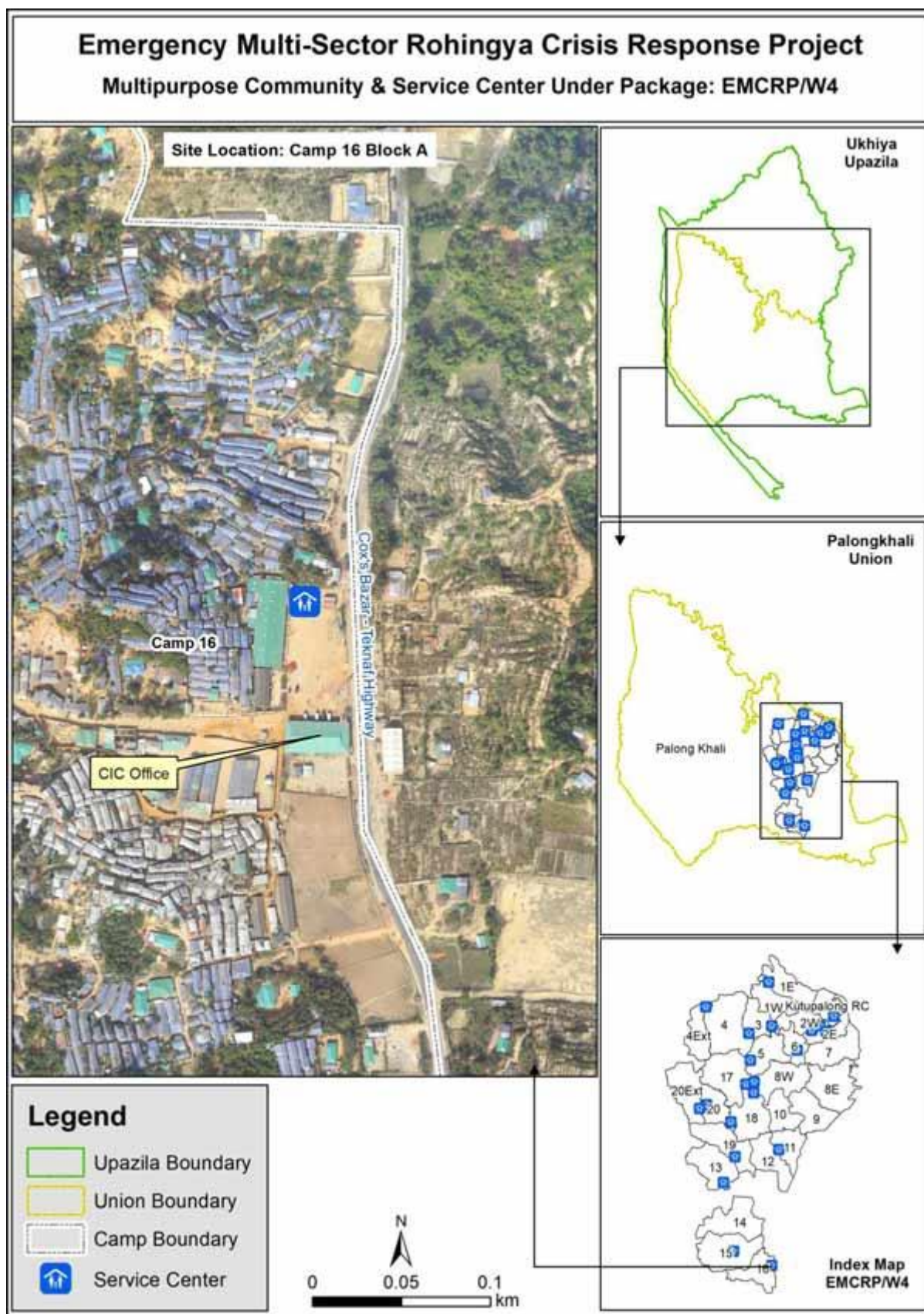


Figure 1.3.3: Union Map with Sub-project location in Camp area

1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	Mosque(30m), DRP Settlements(60m)
South side	CiC Office(30m), Shelters (100m), TIKa distribution center of Turkey (80m SW)
East side	Cox's Bazar-Teknaf Highway(20m), Settlements, (50m)
West side	Clinic(35m), Police Station(20m)

[Sources of data: D&SC Field survey, 2021]



Figure 1.4.1: Present condition of the Sub-project area



Figure 1.4.2: Proposed location of MPSC construction

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 15 February 2021 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 08 persons, and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location in particular has some degree of complications and is not in relevance with the CiC office authority currently. Present Camp in Charge has suggested to consult with RRRC Authority for better understanding because the location which was previously selected is not as available as it was in 2020. If MPSC is constructed here, in that case this location will be lost as the only open space for children to play in camp-16. Moreover, the establishment will obscure the CiC office from a physical point of view and also bring it in a cram-full condition.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Rohingya Camp 16; Block-A and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the

project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Consultation with CiC Authority



Consultation with DRP

Figure 2.1.1: Public Consultation Meeting in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people considered that the selected site is suitable for the construction of Multipurpose service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.
- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.

- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.
- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment. Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 15 February 2021 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected site allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. On the north side Mosque(30m), DRP Settlements(60m); on the south CiC Office(30m), Shelters (100m), TIKA distribution center of Turkey (80m SW); on the east side Cox's Bazar-Teknaf Highway(20m), Settlements, (50m); on the west side Clinic(35m), Police Station(20m). Few disturbance to some of these establishments/features is anticipated due to construction activities

for the case of not being in a sufficient distance from the construction site which is why safety measures such as, strict construction site management system- including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials et cetera should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from pilling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from pilling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routs and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the mitigation options, different initiatives have been undertaken, such as formation and capacity development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones,

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree planation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones have been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tubewell in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose Community and Service Center will be constructed on a high land where some matured vegetation is found. Due to the construction activities of this Sub-project, there are no numbers of trees which may need cutting down. However, 10 nos. of trees should be replanted in the target location. Further, some settlements around the sub-project area might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall effects for this proposed construction works are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.
- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.
- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures

are being realized over time. A comprehensive monitoring framework is suggested in Project ESMF and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguards specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.
- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.

Appendix-1**Environmental Screening Form**

Sub-Project Description Form: (MPSC of Rohingya camp-16, Block-A)

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Ukhiya

Union: Palongkhali

Name of Community/Local Area: Palongkhali, Rohingya Camp-16.

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose community and Service Center Steel Frame 2-storey building will be constructed within target location.

Estimated footprint / land area for this sub-project is 3326.64 sq. feet

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.): Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified location on Rohingya camp area. On the north side Mosque(30m), DRP Settlements(60m); on the south CiC Office(30m), Shelters (100m), TIKA distribution center of Turkey (80m SW); on the east side Cox's Bazar-Teknaf Highway(20m), Settlements, (50m); on the west side Clinic(35m), Police Station(20m). Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the



ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to demolition of an old building and later construction of a new building on the same place. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic. Human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified. On the north side Mosque(30m), DRP Settlements(60m); on the south CiC Office(30m), Shelters (100m), TIKA distribution center of Turkey (80m SW); on the east side Cox's Bazar-Teknaf Highway(20m), Settlements, (50m); on the west side Clinic(35m), Police Station(20m) are present on the surrounding target area.

Some degree of disturbance is anticipated due to construction activities to those components since they are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration route is present nearly 2 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 03. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

Sub-project Location:

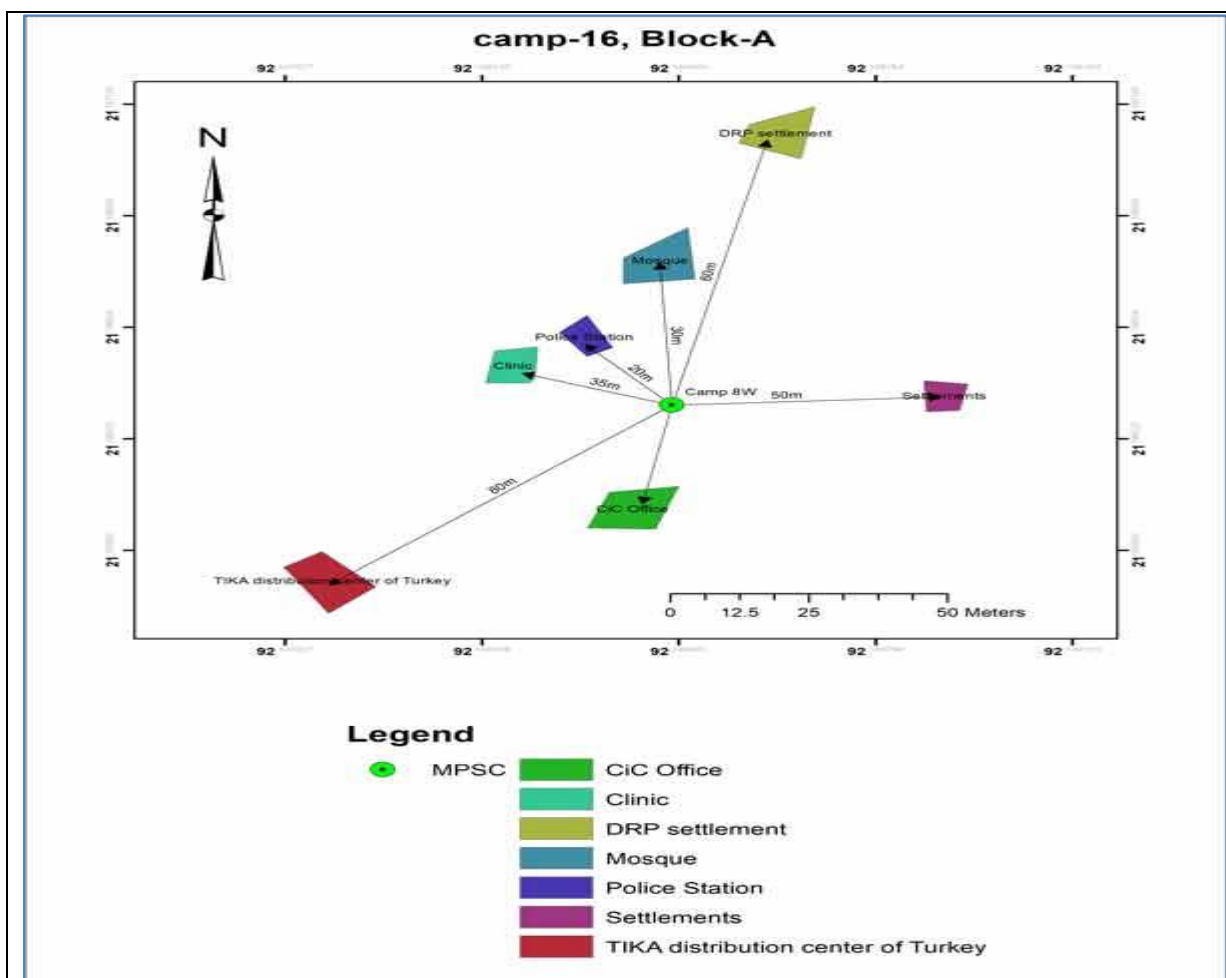
The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district. The sub-project area is located at 21.178715° N and 92.155942° E. The distance from the Upazila headquarter is about 13 km. Nearby major road is Cox's Bazar- Teknaf highway.

Land ownership Land is owned by Government.
Expected construction period: 18 (Eighteen months)
Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted: Project intervention area is found to be an open space, but influence area should consider nearly half a kilometer radius around the proposed site. On the north side Mosque(30m), DRP Settlements(60m); on the south CiC Office(30m), Shelters (100m), TIKA distribution center of Turkey (80m SW); on the east side Cox's Bazar-Teknaf Highway(20m), Settlements, (50m); on the west side Clinic(35m), Police Station(20m) but there is no chance to disturbance during this construction activity. But there is no scope to be affected by the construction activities. No structures, trees and livelihood will be affected by this construction activity. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby. Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

Section B: Environmental Screening

B.1: Environmental feature of sub-project location

Description of cultural properties (if applicable, including distance from site): Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests: On the north side Mosque(30m), DRP Settlements(60m); on the south CiC Office(30m), Shelters (100m), TIKA distribution center of Turkey (80m SW); on the east side Cox's Bazar-Teknaf Highway(20m), Settlements, (50m); on the west side Clinic(35m), Police Station(20m) There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.



Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. Several mosques, Armed police fary, and DRP settlement were found during the survey. Those will not be affected by the construction works, as the activities will be carried out within the existing selected boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

(1) Within/near Elephant Migration Routes Yes/No*

There is no existence of Elephant corridor/ route now, which have been checked on the basis of elephant migration route map established by UNHCR/IUCN (latest updated maps as of 22 February 2018 and later June 05, 2018).

(2) potential impacts on remaining forests in/around camps Yes/No

N/A (This activity will be ensured in DRP community and within existing camp boundary)

(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:
Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation):

N/A (the sub-project will be constructed in a plain land and within an identified camp boundary)

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 800 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2019). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

State of forestation:

Patches of vegetation containing large and matured trees across the road side of the proposed subproject area are located within 200m radial distance.

Summary of water balance analysis (For water supply scheme only): N/A

B.2: Pre construction Phase
Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable):

The Cox's Bazar-Teknaf highway is present on the east of the selected location and in close proximity. It is possible to carry the construction materials on this road to the construction site.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:

Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.

Possible location of labor camps:

Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.

Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes vii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and viii) clay are the most common type of building material used in construction.

Identification of access road for transportation (Yes/No):

The Cox's Bazar-Teknaf highway is present on the east of the selected location and in close proximity. It is possible to carry the construction materials on this road to the construction site.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with CiC authority.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase
Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And

the quantity will be tentatively 200 kg.
Type and quantity of raw materials used (wood, bricks, cement, water, etc.): Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period. Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.
Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards: Around 3326.64 sq. feet land is required for the sub-project establishment. There is reasonable vegetation around the sup-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.
Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation) Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.
Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description) No pre-existing drainage channel is found. Though a marshy land is found outside of the construction area, but will not be affected because of having a fair distance from the construction site and the adoption of proper construction site management practices.
Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description) Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.
Activities that can lead to landslides, slumps, slips and other mass movements in road cuts: The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

Low. The proposed multipurpose community and service center will be equipped with full facilities for conducting multipurpose services to targeted people, including separate toilets (sanitary) for male and female persons, water supply and filtration, storage and other facilities. No fecal sludge will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be produced in a typical day and higher amount of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC authority should be made aware of this separation and disposal procedure.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

During the operation phase, this Multipurpose Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There is no protected area in or around the project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

The proposed site is located inside the camp area. A HBB road connects the sites with main road. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc. therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere.	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. - Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	students, children, animals, etc.)		- Proper covering of dust producing materials with polythene sheet, - Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. - Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is Low	- Water spraying at the demolition site - Fencing / Installing barriers should be shield from dust and aggregates - Avoid usage of machines/equipment with extra noise; - Do not accumulate and burn waste at the site - Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders - It needs to Identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- Make mandatory the use of safety gears (helmets, safety belts, masks, gloves and boot) by workers depending on nature of work. - Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.			
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	Under the sub-project intervention, the overall score is low.	- Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. - Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. - Provision of waste bins/ cans, where	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity; Waste disposal record.	Prior to the start of Construction works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times.			
	Accidents	Under the sub-project intervention, the overall score is low.	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. - Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc. should be available in the site during construction period.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score is low.	- Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage. - Involve the community in planning the work	Contractor, environmental specialist of D&SC	Number of complaints from stakeholders, Use of	Daily



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			program so that any particularly noisy or otherwise invasive activities can be scheduled to avoid sensitive times. • Avoid using of construction equipment producing excessive noise at school time & at night. • Ear protection devices for the workers & site staffs should be available in site during construction period.		silencers in noise producing equipment and sound barriers, Noise Level following decibel meter (dB)	
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation	Under the sub-project intervention, the overall score is low.	• Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. • Use tarpaulins to cover soils, sand and other loose material when transported by trucks. • Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free. • Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). • Limiting speed of construction vehicles in work sites to maximum of 20 km/h.	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution control	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	measures.		Regular monitoring of air quality.		devices, Maintain records	
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	- Prohibit employees from cutting of trees for firewood. - If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. - Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	- Prevent excessive noise; - Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); - No fires permitted on site except if needed for the construction works; - Staff must be trained up for operating equipment, - Availability and access to first-aid equipment and medical supplies. - Ensure the presence and use of safety gear at	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at project	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets, Uniforms etc., - Ensure adequate supply of drinking water. - Sanitation facilities for male & female workers separately.		location;	
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - All affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; - All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; - The contractor must arrange the cancellation of all temporary services;	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Odor& waste disposal	Under the issue the overall score is low.	Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and PMU	Complaints from communities	Site inspection daily / weekly basis.
	Vegetation	Under the issue the overall score is low.	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions;	Over the completion of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turfing, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required. Mention some recommendation on E&S assessment ESMP*

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.



Appendix-2

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Construction of 22 Multipurpose Community and Service Center Steel Frame Building (LGED/EMCRP-W4): MPSC of Rohingya Camp-16, Block-A

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of	Selected site will be far away from any water bodies or	PIU & Contractor	Environmental Consultant of PIU,



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	natural drainage	natural flow path to avoid the flash flood or any kind or surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.		PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	- Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. - It will be ensured that proper training and guidance are provided on general and occupational health and safety to Contractors' personnel and labors forces, and records of	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		training sessions are to be kept on site. All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. - Adequate facilities ensuring sanitation for labor camps will	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		be put in place. - Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labour forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared time to time for all types of work activities on site. - Proper walkways will be prepared for students and teachers in existing school boundary. - Proper Signpost at any slippery areas will be ensured in construction site.	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. - Adequate quantities of drinking water will be available at all		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Maintenance of assets, properties and	Periodic maintenance of building structures, plumbing, water filtering and electric equipment has to be carried out.	The party CiC find fit	UNO, Upazila Chairman of Upazila



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	equipment	- Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.		Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.
- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.



- Kitchen space disassembling must be treated with same level of accuracy and caution.
- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.

For wastes generated from construction and demobilization debris:

- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.
- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.



- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site;
- Burning of any type of wastes in the construction site shall be prohibited completely.

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Appendix-3

Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 20,000	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles	LS	LS @ Tk 30,000	30,000
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	2 nos.	@10,000 each	20,000
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as	2 no.	LS @ Tk. 30,000	60,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.			
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. The Safeguard personnel will take duty for 11 sites, so one-eleventh of the personnel cost is counted here.	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months (1/11 one site). (Net payment excluding Tax & VAT)	57,272.73
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73

**Cost of H&S Measures under COVID 19 Situations**

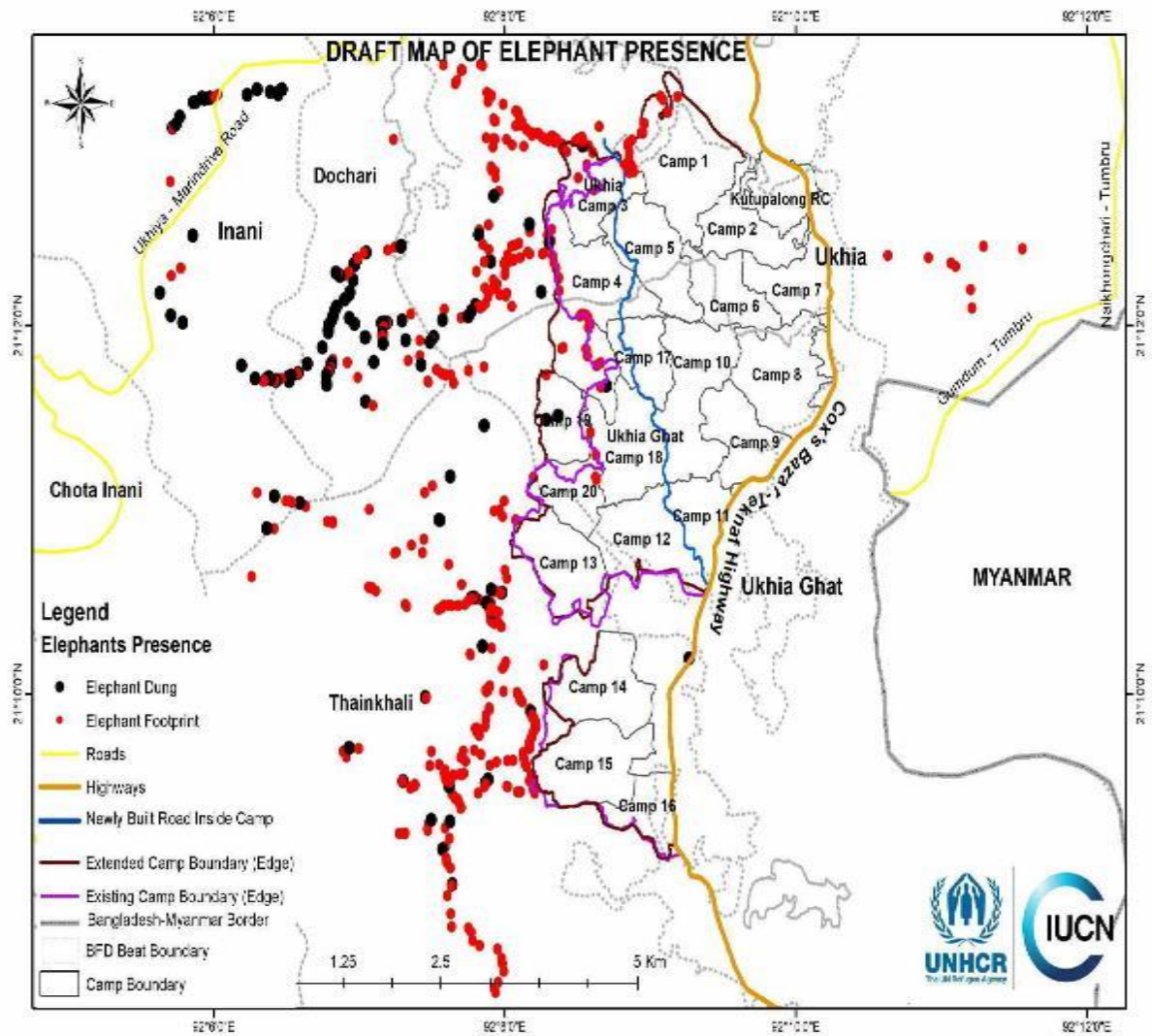
Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for	2 bottles and 1 Can for each	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office



Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
	Refill)	site						
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						165,125.00	

Appendix-4



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

[illegible]

Public consultation participant list



Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762

IDA Credit No. 5561-BD



ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-17,
Block-C, Type-2

Union: Palongkhali; Upazila: Ukhiya

District: Cox's Bazar

Funded by:



Government of the People's Republic of Bangladesh & World Bank

Design and Supervision Consultancy:



Development Design Consultants Ltd.

March 2021

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department

MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank



1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Community and Service Centers are to offer the facilities which will improve the availability.

These Multipurpose Community and Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which are identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multipurpose Community and Service Center (MPSC) will be constructed under Palongkhali union in Rohingya camp number 17, Block C of Ukhiya Upazila under Cox's Bazar district. The catchment area of the subproject comprises the surrounding area of Rohingya camp 17. Typical camp settlement settings of the area are no exception than other camp

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya Camp-17, Block-C
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
Owner of land	Government
Land Available (sq.ft.)	5900
Structural Design Option	Type-2 (Rectangular Steel Frame 2-story building (90 feet x 41 feet 7 inches)
Catchment area	Camp-17
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	There is no direct route to connect the facility since it is inside camp location.
Land acquisition	Not required
Current land condition	The location is on selected open space.

[D&SC and Field survey, 2021]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-17; Block-C		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3753
Number of Floors	2	3753X2
Number of Class room (sq. feet)	3	each@ 14'-11" X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.

1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-17, Block-C of Ukhiya Upazila in Cox's Bazar District. The site location is relatively on very low ground but not accessible through vehicles which does not connect with any main road. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Community and Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
GPS position	21.195798 N and 92.146760 E
Distance from Upazila HQ	12 km
Nearby major road	N/A
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2021]

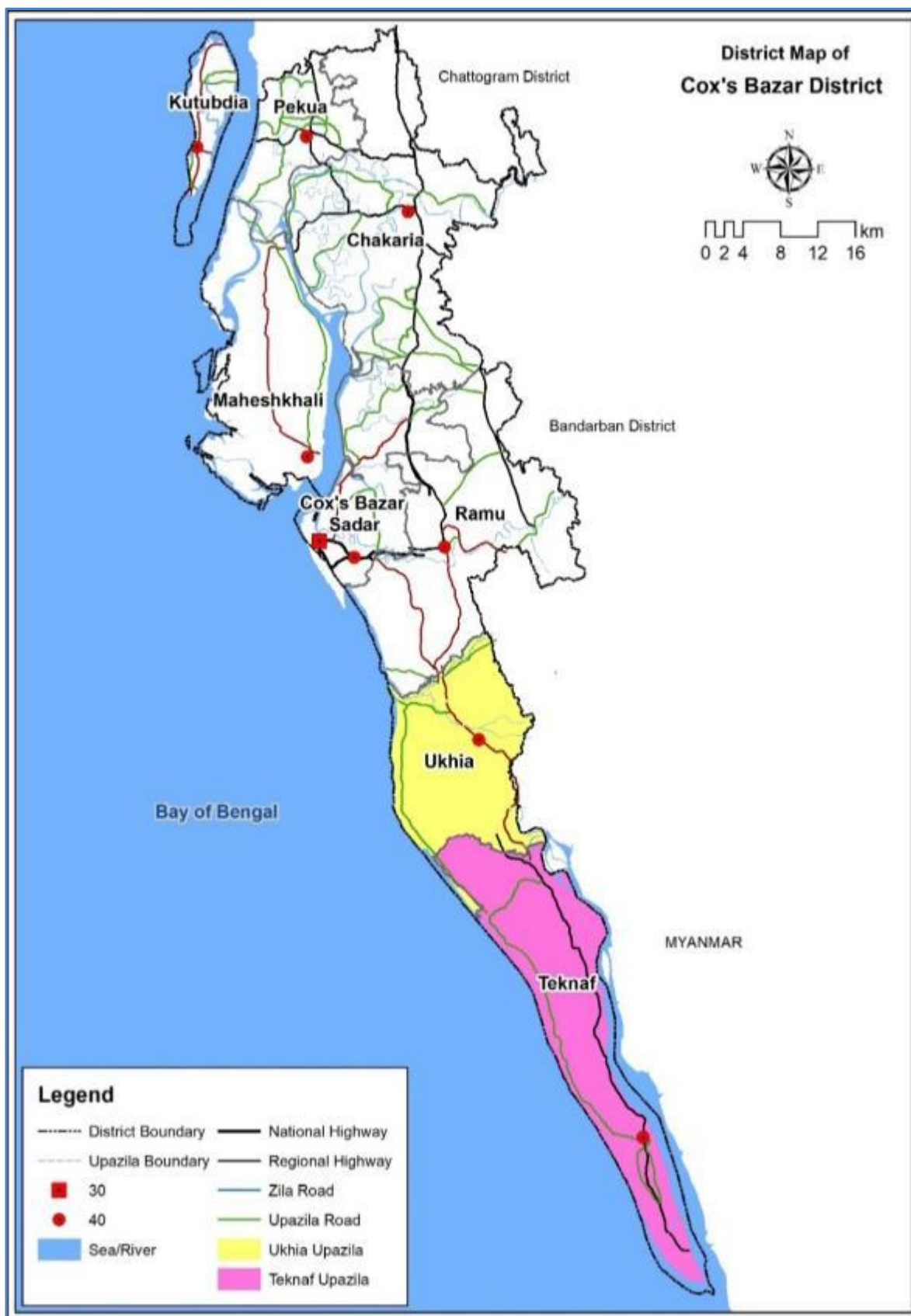


Figure 1.3.1: District Map with project location

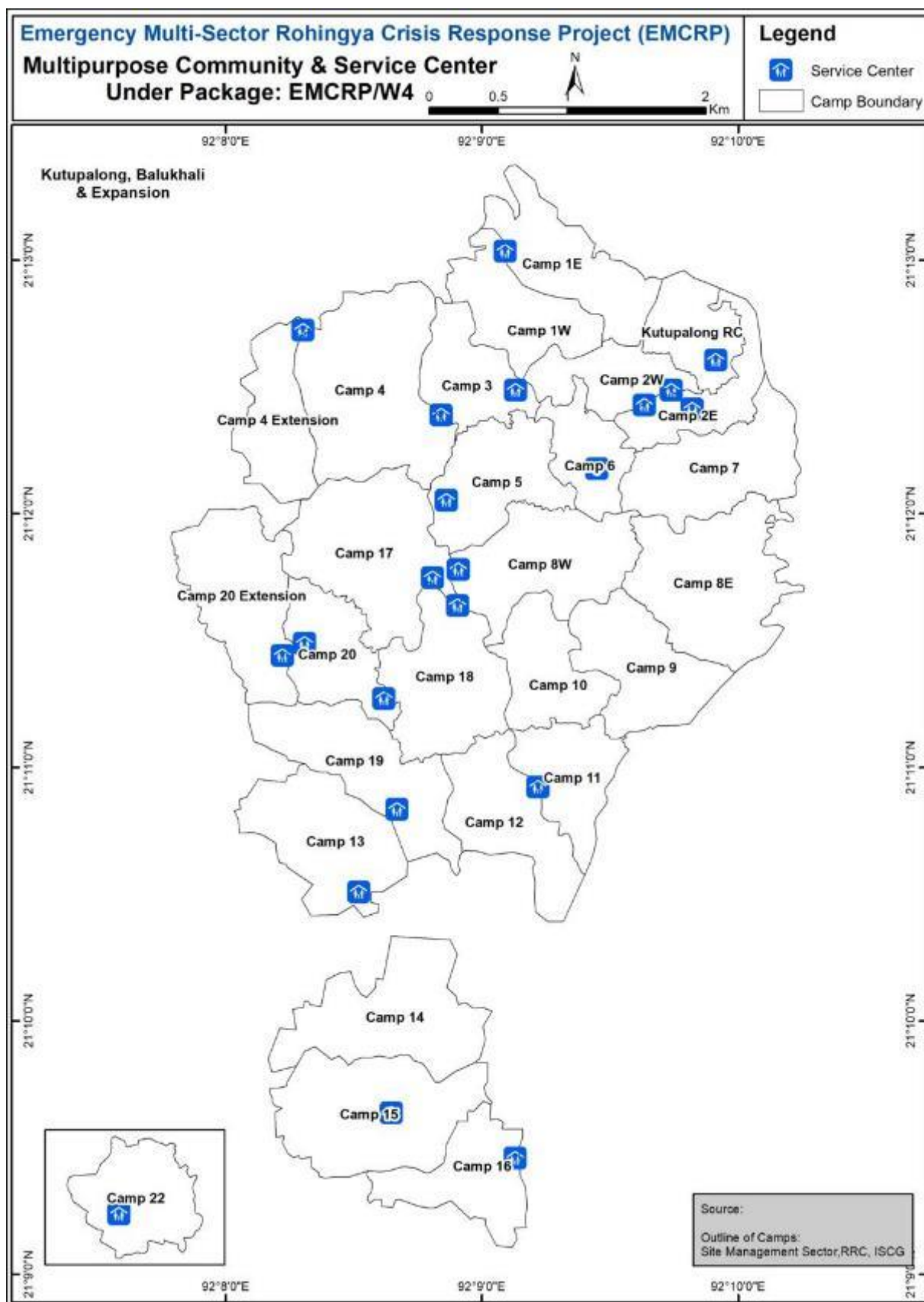


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)

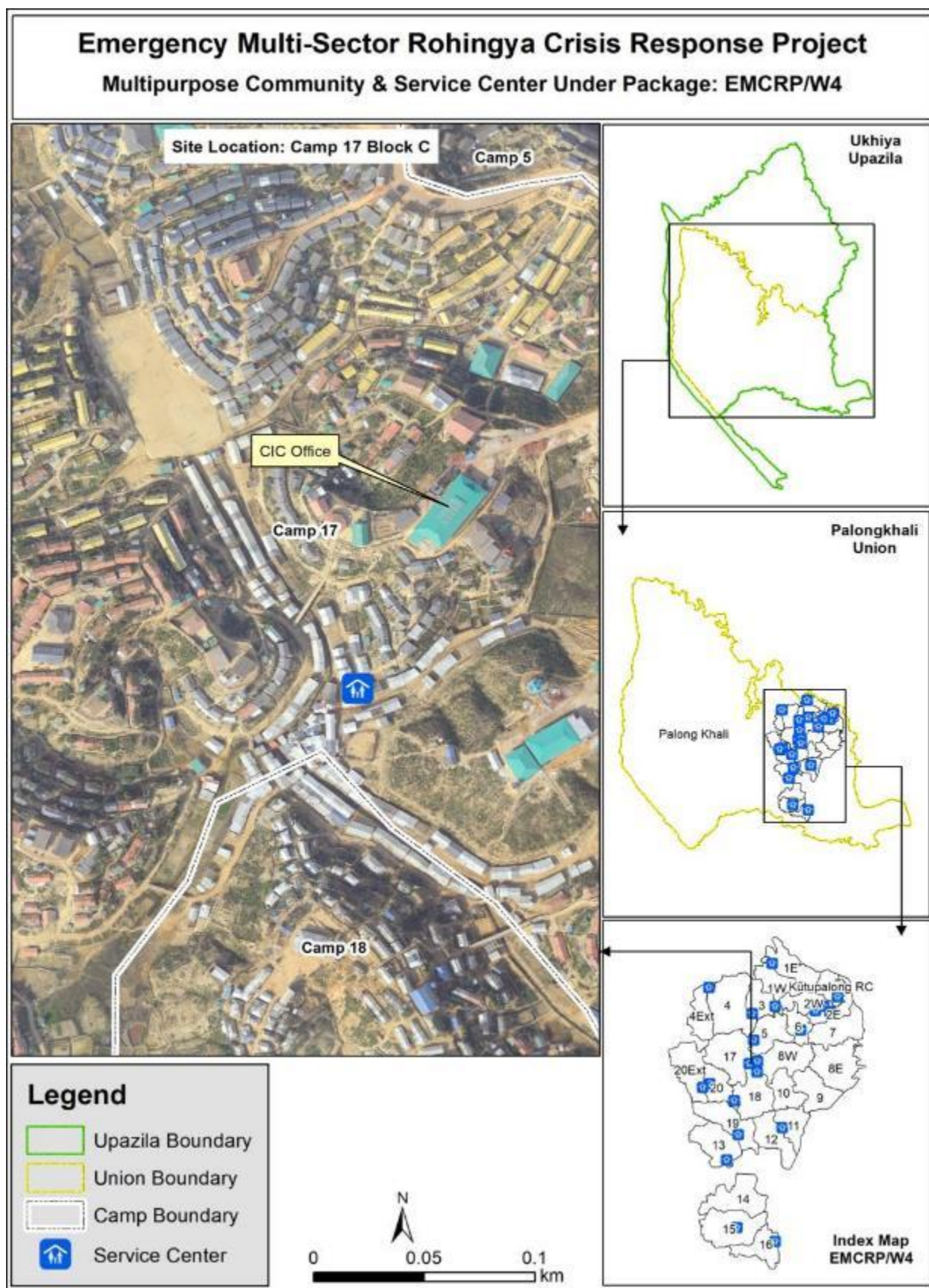


Figure 1.3.3: Union Map with Sub-project location in Camp area

1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	DRP settlements (20m)
South side	DRP shops (20m), DRP settlements (30m)
East side	Toilet (20m), DRP settlements (25m), Mosque & Hefzakhana (30m)
West side	DRP settlements (10m)

[Sources of data: D&SC Field survey, 2021]



Figure 1.4.1: Present condition of the Sub-project area



Figure 1.4.2: Proposed location of MPSC construction

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 09 February 2021 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 11 persons, and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location in particular has no major complications and is in relevance with the CiC office authority currently. Present Camp in Charge (CiC) has suggested to start the development works as early as possible.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Rohingya Camp 17; Block-C and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Figure 2.1.1: Public Consultation Meeting in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people considered that the selected site is suitable for the construction of Multipurpose service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.
- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.
- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.

- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment. Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 09 February 2021 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected sited allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. On the north side of the sub project Rohingya community households at 20m; on the south side of the sub-project area DRP shops at 20m, DRP settlements at 30m; on the east side toilet of DRP community at 20m, DRP settlements at 25m, one mosque/hefzakhana at 30m and on the west side settlements of DRP community at 20m. Few disturbance to some of these establishments/features is anticipated due to construction activities for the case of not being in a sufficient distance from the construction site which is why safety measures such as, strict

construction site management system- including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials et cetera should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from pilling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from pilling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routs and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the mitigation options, different initiatives have been undertaken, such as formation and capacity development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones,

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree planation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones have been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tubewell in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose Community and Service Center will be constructed on a high land where some matured vegetation is found. Due to the construction activities of this Sub-project, trees (small and medium size) will not be cut down and as well as 10 nos. of trees will be planted in the target location. Further, some settlements of DRP community of sub-project area might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall effects for this proposed construction works are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.
- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.
- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures

are being realized over time. A comprehensive monitoring framework is suggested in Project ESMF and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMF. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMF implementation activities on contractors' behalf. Apart from the ESMF implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMF, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguards specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMF to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed

guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.
- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.

Appendix-1**Environmental Screening Form**

Sub-Project Description Form: (MPSC of Rohingya Camp-17, Block-C)

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Ukhiya

Union: Palongkhali

Name of Community/Local Area: Palongkhali, Rohingya Camp-17.

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose community and Service Center Steel Frame 2-story building will be constructed within target location.

Estimated footprint / land area for this sub-project is 5900 sq. feet

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.): Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified location on Rohingya camp 17, Block C area. On the north side of the sub project Rohingya community households at 20m; on the south side of the sub-project area DRP shops at 20m, DRP settlements at 30m; on the east side toilet of DRP community at 20m, DRP settlements at 25m, one mosque/hefzakhana at 30m and on the west side settlements of DRP community at 20m. Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any

adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to construction of a new building on the selected place. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic. Human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified. On the north side of the sub project Rohingya community households at 20m; on the south side of the sub-project area DRP shops at 20m, DRP settlements at 30m; on the east side toilet of DRP community at 20m, DRP settlements at 25m, one mosque/hefzakhana at 30m and on the west side settlements of DRP community at 20m are present on the surrounding target area.

Some degree of disturbance is anticipated due to construction activities to those components since they are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration route were nearly 2 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 02. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

Sub-project Location:

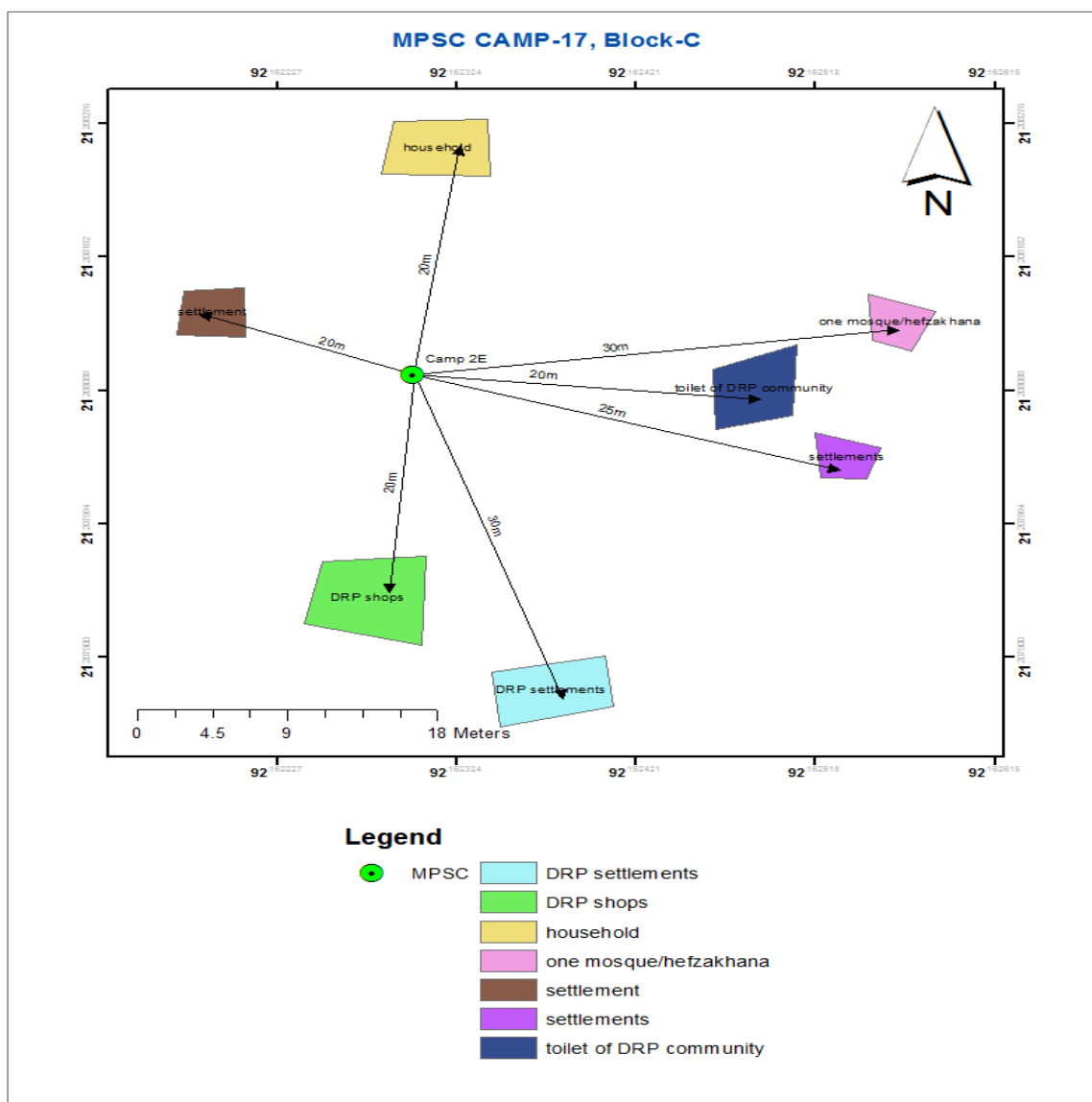
The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district. The sub-project area is located at 21.195798 N and 92.146760 E. The distance from the Upazila headquarter is about 12 km.

Land ownership Land is owned by Government.
Expected construction period: 18 (Eighteen months)
Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted: Project intervention area is found to be an open space, but influence area should consider nearly half a kilometer radius around the proposed site. On the north side of the sub project Rohingya community households at 20m; on the south side of the sub-project area DRP shops at 20m, DRP settlements at 30m; on the east side toilet of DRP community at 20m, DRP settlements at 25m, one mosque/hefzakhana at 30m and on the west side settlements of DRP community at 20m but there is no chance to disturbance during this construction activity. But there is no scope to be affected by the construction activities. No structures, trees and livelihood will be affected by this construction activity. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby. Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

Section B: Environmental Screening

B.1: Environmental feature of sub-project location

Description of cultural properties (if applicable, including distance from site): Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests: On the north side of the sub project Rohingya community households at 20m; on the south side of the sub-project area DRP shops at 20m, DRP settlements at 30m; on the east side toilet of DRP community at 20m, DRP settlements at 25m, one mosque/hefzakhana at 30m and on the west side settlements of DRP community at 20m. There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.



Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. It will not be affected by the construction works, as the activities will be carried out within the existing camp boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

(1) Within/near Elephant Migration Routes Yes/No*

There is no existence of Elephant corridor/ route now, which have been checked on the basis of elephant migration route map established by UNHCR/IUCN (latest updated maps as of 22 February 2018 and later June 05, 2018).

(2) potential impacts on remaining forests in/around camps Yes/No

N/A (This activity will be ensured in DRP community and within existing camp boundary)

(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:
Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation):

N/A (the sub-project will be constructed in a plain land and within an identified camp boundary)

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 800 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2019). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

**State of forestation:**

Patches of vegetation containing large and matured trees on all edges of the proposed subproject area are located within 200m radial distance.

Summary of water balance analysis (For water supply scheme only):

N/A

B.2: Pre construction Phase**Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable):**

A HBB road is passing on the east side of the sub-project. It is possible to carry the construction materials on this road to the construction site.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:

Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.

Possible location of labor camps:

Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.

Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes vii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and viii) clay are the most common type of building material used in construction.

Identification of access road for transportation (Yes/No):

A HBB road is passing on the east side of the sub-project. It is possible to carry the construction materials on this road to the construction site.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with CiC authority.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly

composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 200 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period.

Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

Around 3753 sq. feet land is required for the sub-project establishment.

There is reasonable vegetation around the sub-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No pre-existing drainage channel is found. Though a marshy land is found outside of the construction area, but will not be affected because of having a fair distance from the construction site and the adoption of proper construction site management practices.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)



Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

Low. The proposed multipurpose community and service center will be equipped with full facilities for conducting multipurpose services to targeted people, including separate toilets (sanitary) for male and female persons, water supply and filtration, storage and other facilities. No fecal sludge will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be

produced in a typical day and higher amount of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC authority should be made aware of this separation and disposal procedure.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

During the operation phase, this Multipurpose Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There is no protected area in or around the project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

The proposed site is located inside the camp area. A HBB road connects the sites with main road. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc. therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because



of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere.	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. - Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of students, children,	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC. - Proper covering of dust producing materials with polythene sheet,	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	animals, etc.)		• Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. • Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is low	• Water spraying at the demolition site • Fencing / Installing barriers should be shield from dust and aggregates • Avoid usage of machines/equipment with extra noise; • Do not accumulate and burn waste at the site • Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders • It needs to Identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies • Make mandatory the use of safety gears (helmets, safety belts, masks, gloves and boot) by workers depending on nature of work.	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.			
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	Under the sub-project intervention, the overall score is low.	- Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. - Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity; Waste disposal record.	Prior to the start of Construction works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. Camp and working areas are to be kept clean and tidy at all times.			
	Accidents	Under the sub-project intervention, the overall score is low.	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. - Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc. should be available in the site during construction period.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score is low.	- Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage. - Involve the community in planning the work program so that any particularly noisy or otherwise invasive activities can be scheduled to avoid sensitive times. - Avoid using of construction equipment	Contractor, environmental specialist of D&SC	Number of complaints from stakeholders, Use of silencers in noise producing equipment	Daily



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			producing excessive noise at school time & at night. • Ear protection devices for the workers & site staffs should be available in site during construction period.		and sound barriers, Noise Level following decibel meter (dB)	
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.	Under the sub-project intervention, the overall score is low.	• Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. • Use tarpaulins to cover soils, sand and other loose material when transported by trucks. • Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free. • Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). • Limiting speed of construction vehicles in work sites to maximum of 20 km/h. • Regular monitoring of air quality.	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution control devices, Maintain records	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	- Prohibit employees from cutting of trees for firewood. - If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. - Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	- Prevent excessive noise; - Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); - No fires permitted on site except if needed for the construction works; - Staff must be trained up for operating equipment, - Availability and access to first-aid equipment and medical supplies. - Ensure the presence and use of safety gear at site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets, Uniforms etc., - Ensure adequate supply of drinking water.	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at project location;	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Sanitation facilities for male & female workers separately.			
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - All affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; - All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; - The contractor must arrange the cancellation of all temporary services;	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works
	Odor& waste disposal	Under the issue the overall score is low.	Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and PMU	Complaints from communities	Site inspection daily / weekly basis.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Vegetation	Under the issue the overall score is low.	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions;	Over the completion of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turfing, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required. Mention some recommendation on E&S assessment ESMP*

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.



Appendix-2

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Construction of 22 Multipurpose Service Center Steel Frame Building (LGED/EMCRP-W4): MPSC of Rohingya Camp-17, Block-C

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of	Selected site will be far away from any water bodies or	PIU & Contractor	Environmental Consultant of PIU,



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	natural drainage	natural flow path to avoid the flash flood or any kind or surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.		PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	- Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. - It will be ensured that proper training and guidance are provided on general and occupational health and safety to Contractors' personnel and labors forces, and records of	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		training sessions are to be kept on site. All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. - Adequate facilities ensuring sanitation for labor camps will	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		be put in place. - Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labour forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared time to time for all types of work activities on site. - Proper walkways will be prepared for students and teachers in existing school boundary. - Proper Signpost at any slippery areas will be ensured in construction site.	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. - Adequate quantities of drinking water will be available at all		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Maintenance of assets, properties and	Periodic maintenance of building structures, plumbing, water filtering and electric equipment has to be carried out.	The party CiC find fit	UNO, Upazila Chairman of Upazila



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	equipment	- Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.		Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization works:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.



- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.
- Kitchen space disassembling must be treated with same level of accuracy and caution.
- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.



For wastes generated from construction and demobilization debris:

- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.
- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.
- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site.
- Burning of any type of wastes in the construction site shall be prohibited completely.

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Appendix-3

Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 20,000	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles	LS	LS @ Tk 30,000	30,000
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	2 nos.	@10,000 each	20,000
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as	2 no.	LS @ Tk. 30,000	60,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.			
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. The Safeguard personnel will take duty for 11 sites, so one-eleventh of the personnel cost is counted here.	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months (1/11 one site). (Net payment excluding Tax & VAT)	57,272.73
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73

**Cost of H&S Measures under COVID 19 Situations**

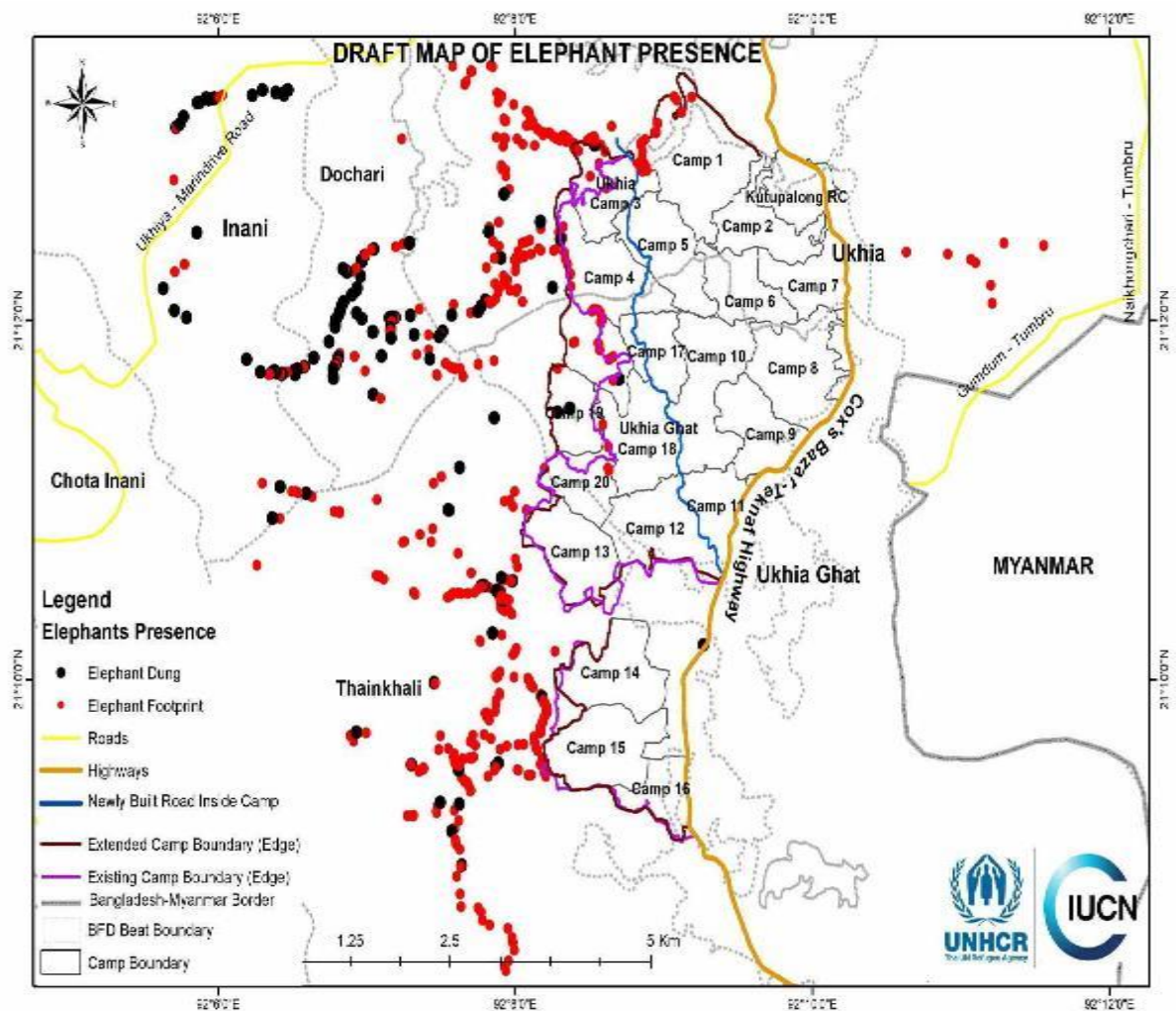
Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for	2 bottles and 1 Can for each	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office



Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
	Refill)	site						
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						165,125.00	

Appendix-4



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

ভাঙ্গা-১ ভিত্তিতে রোহিঙ্গা সংকট মোকাবেলায় স্থানীয় সেক্টর প্রকল্প

Local Government Engineering Department (LGED)

Public Consultation Participants List

Focus Group Discussion

সময়: ১২.৫০

তারিখ: ০৭.০২-২১

উপ-প্রকল্প/কম্পোনেন্ট এর নাম: MPSC - Camp-17, Block-e

মত বিনিময় স্থান: MPSC-ক্যাম্প-১৭ ব্লক-এ মোঃ হোসেনের বাড়ি দেওয়ান।

ইউনিয়ন: নান্দুয়া

ওয়ার্ড নং: ১

ডাকঘর: বাগুয়া

উপজেলা: টাঙ্গুয়া

জেলা: কক্সবাজার

সব প্রকল্প নং: EMCRP/W-4

অংশগ্রহণকারীদের তালিকা (পরিচয় ও স্বাক্ষর)

ক্রম নং	নাম	বয়স	পুরুষ/নারী	গ্রাম	স্বাক্ষর / টিপসই
১	মোঃ হোসেন	২০	পুরুষ	Camp-17	
২	মোঃ হুমায়ুন	২৬	পুরুষ	"	
৩	মোঃ মাসুম	২২	পুরুষ	"	
৪	মোঃ ফারুক	২০	পুরুষ	"	
৫	মুঃ (মাসুম)	২০	পুরুষ	"	
৬	মুঃ (মাসুম)	২৭	পুরুষ	"	
৭	মুঃ (মাসুম)	৪০	পুরুষ	"	
৮	মুঃ (মাসুম)	২৬	পুরুষ	"	
৯	মুঃ (মাসুম)	২০	পুরুষ	"	
১০	মুঃ (মাসুম)	৬০	পুরুষ	"	
১১	মুঃ (মাসুম)	২২	পুরুষ	"	

Public consultation participant list



Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762

IDA Credit No. 5561-BD



ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-18,
Block-8/59, Type-2

Union: Palongkhali; Upazila: Ukhiya

District: Cox's Bazar

Funded by:



Government of the People's Republic of Bangladesh & World Bank

Design and Supervision Consultancy:



Development Design Consultants Ltd.

March 2021

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department

MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank



1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Community and Service Centers are to offer the facilities which will improve the availability.

These Multipurpose Community and Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which is identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multipurpose Community and Service Center (MPSC) will be constructed under Palongkhali union in Rohingya camp number 18, Block 8/59 of Ukhiya Upazila under Cox's Bazar district. The catchment area of the subproject comprises the surrounding area of Rohingya camp 18. Typical camp settlement settings of the area are no exception than other

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

camp locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya Camp-18, Block-8/59
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
Owner of land	Government
Land Available (sq.ft.)	4500
Structural Design Option	Type-2 (Rectangular Steel Frame 2-story building (90 feet x 41 feet 7 inches)
Catchment area	Camp-18
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	There is no direct route to connect the facility since it is inside camp location.
Land acquisition	Not required
Current land condition	The location is on open space.

[D&SC and Field survey, 2021]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-18; Block-8/59		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3753
Number of Floors	2	3753X2
Number of Class room (sq. feet)	3	each@ 14'-11" X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.

1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-18, Block-8/59 of Ukhiya Upazila in Cox's Bazar District. The site location is relatively a high plain land but not accessible through vehicles as of 4ft wide HBB road is present near the site which does not connect with any main road. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Community and Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
GPS position	21.193973 N and 92.148408 E
Distance from Upazila HQ	13 km
Nearby major road	Army road
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2021]

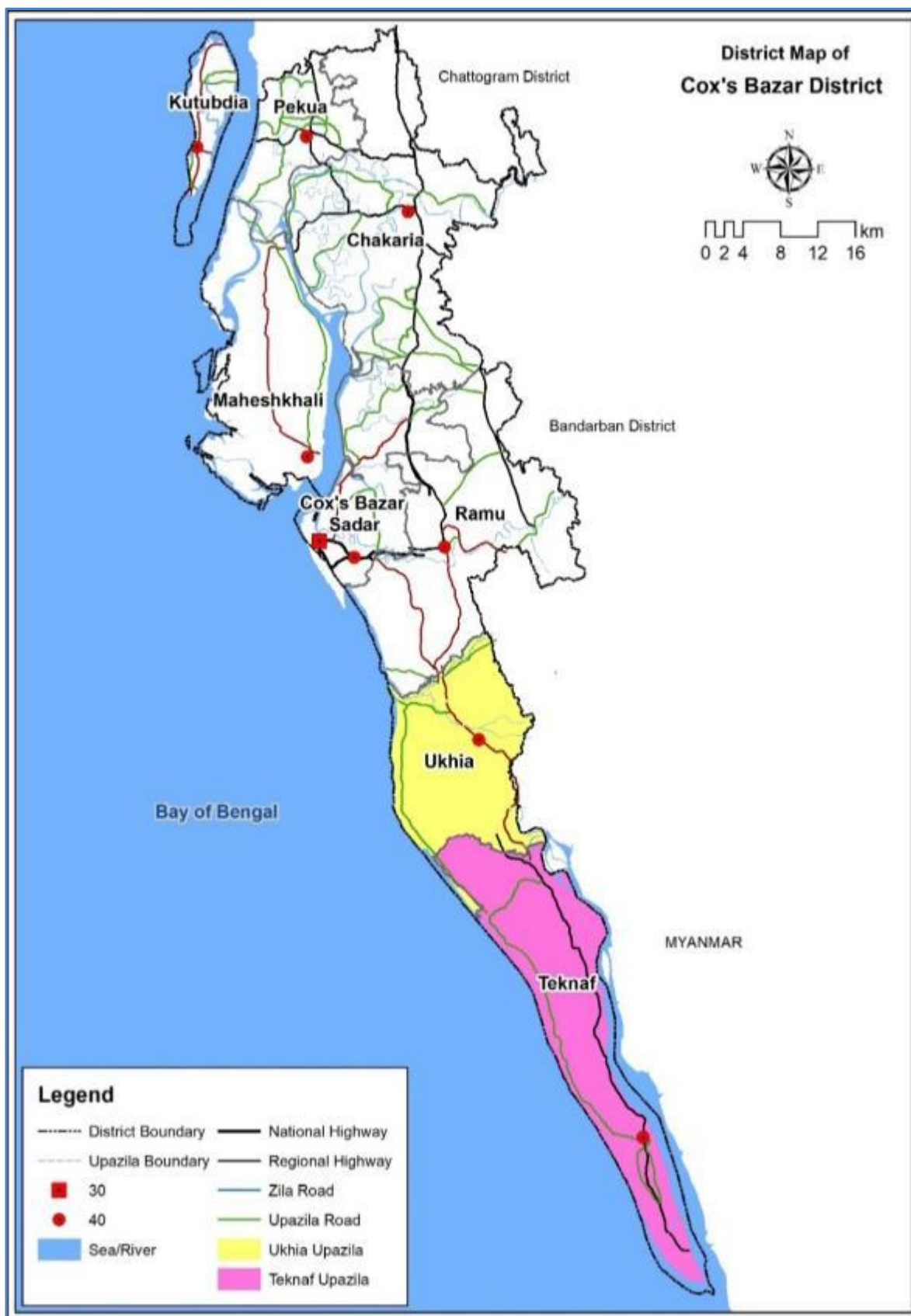


Figure 1.3.1: District Map with project location

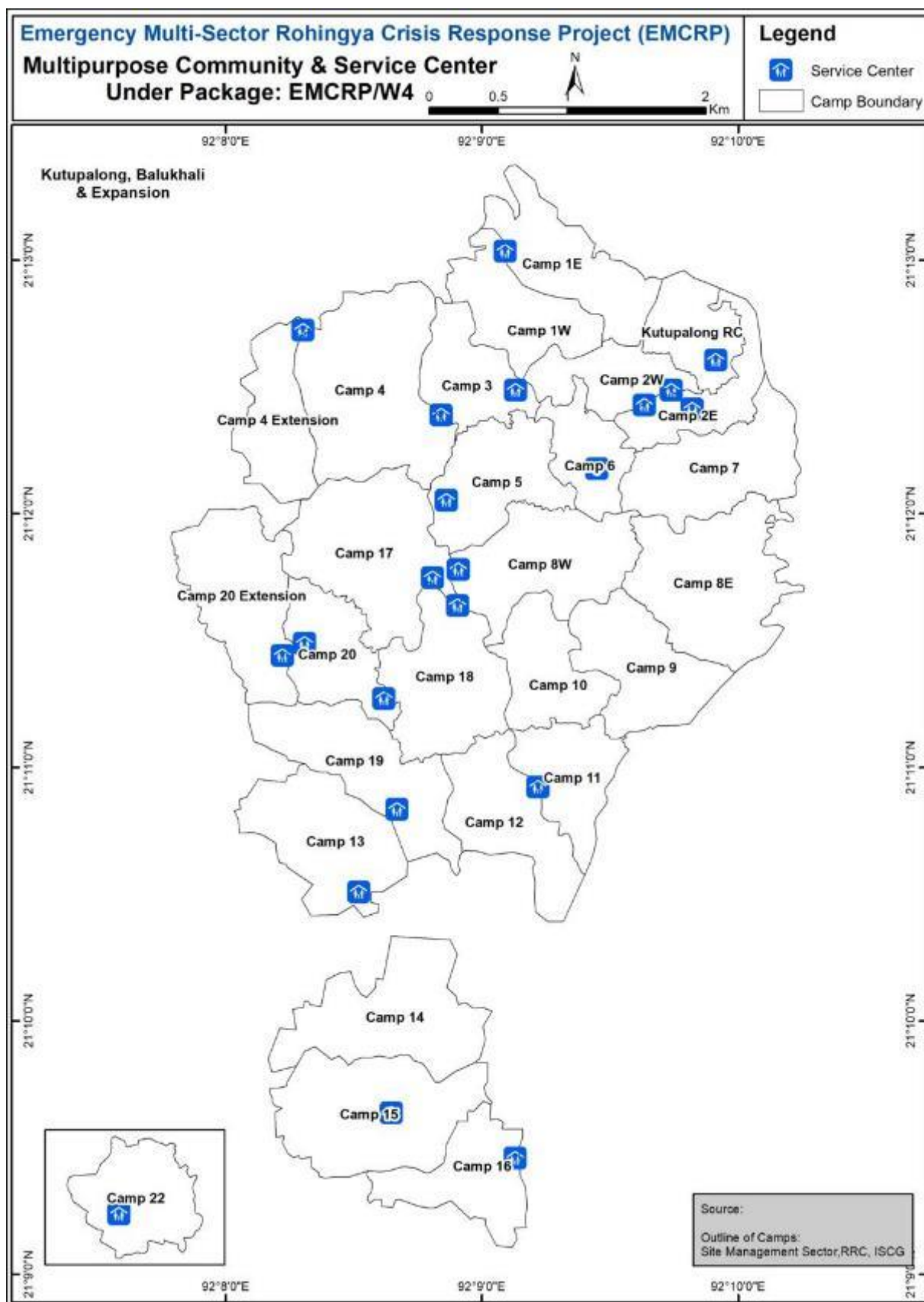


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)

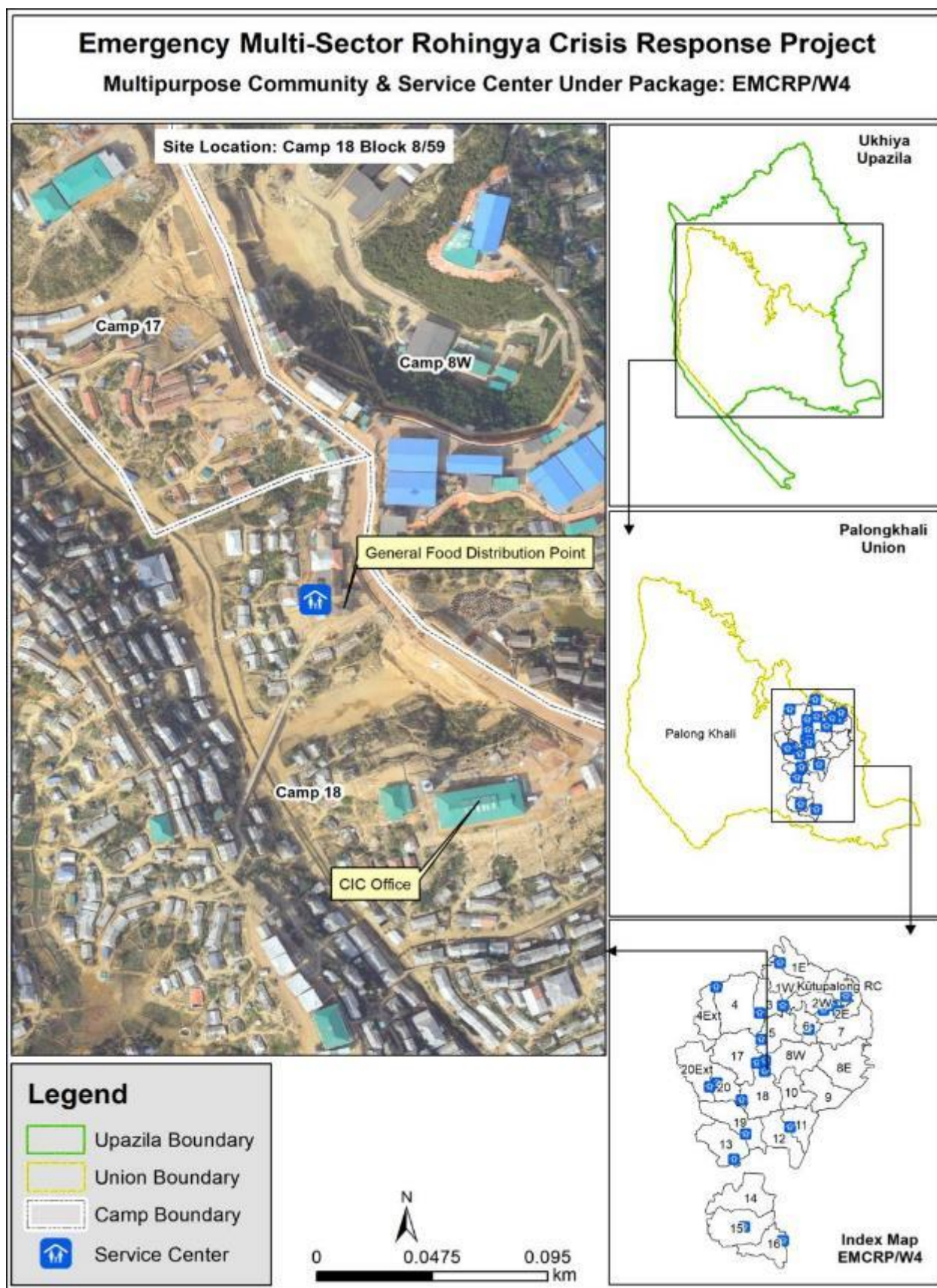


Figure 1.3.3: Union Map with Sub-project location in Camp area

1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	DRP Settlements (70m), Mobile tower (300m), MSF Medical Center (350m)
South side	DRP Settlements (50m), mosque (150m), Brac CFS (200m)
East side	DRP Settlements (50m), mosque (30m)
West side	U-drain (5m), DRP Settlements (30m), Mosque (60m), graveyard (400m), PHD health post (80m)

[Sources of data: D&SC Field survey, 2021]



Figure 1.4.1: Present condition of the Sub-project area



Figure 1.4.2: Proposed location of MPSC construction

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 09 February 2021 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 13 persons, and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location in particular has no major complications and is in relevance with the CiC office authority currently. Present Camp in Charge (CiC) has suggested to start the development works as early as possible.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Rohingya Camp 18; Block-8/59 and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Figure 2.1.1: Public Consultation Meeting in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people considered that the selected site is suitable for the construction of Multipurpose service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.
- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.
- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.

- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment. Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 09 February 2021 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected sited allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. On the north side of the sub project DRP Settlements (70m), Mobile tower (300m), MSF Medical Center (350m); on the south side of the sub-project area DRP Settlements (50m), mosque (150m), Brac CFS (200m); on the east side DRP Settlements (50m), mosque (30m) and on the west side U-drain (5m), DRP Settlements (30m), Mosque (60m), graveyard (400m), PHD health post (80m). Few disturbance to some of these establishments/features is anticipated due to construction activities for the case of not being in a sufficient distance from the construction site which is why

safety measures such as, strict construction site management system- including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials et cetera should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from piling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from piling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routs and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the mitigation options, different initiatives have been undertaken, such as formation and capacity development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones,

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree planation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones have been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tubewell in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose Community and Service Center will be constructed on a high land where some matured vegetation is found. Due to the construction activities of this Sub-project, trees (small and medium size) will not be cut down and as well as 10 nos. of trees will be planted in the target location. Further, some settlements of sub-project area might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall effects for this proposed construction works are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.
- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.
- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures

are being realized over time. A comprehensive monitoring framework is suggested in Project ESMF and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguards specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.
- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.

Appendix-1**Environmental Screening Form**

Sub-Project Description Form: (MPSC of Rohingya Camp-18, Block-8/59)

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Ukhiya

Union: Palongkhali

Name of Community/Local Area: Palongkhali, Rohingya Camp-18.

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose community and Service Center Steel Frame 2-story building will be constructed within target location.

Estimated footprint / land area for this sub-project is 4500 sq. feet

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.): Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified location on Rohingya camp 18, Block 8/59 area. On the north side of the sub project DRP Settlements (70m), Mobile tower (300m), MSF Medical Center (350m); on the south side of the sub-project area DRP Settlements (50m), mosque (150m), Brac CFS (200m); on the east side DRP Settlements (50m), mosque (30m) and on the west side U-drain (5m), DRP Settlements (30m), Mosque (60m), graveyard (400m), PHD health post (80m). Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any

adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to demolition of an old structures and later construction of a new building on the same place. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic. Human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified. On the north side of the sub project DRP Settlements (70m), Mobile tower (300m), MSF Medical Center (350m); on the south side of the sub-project area DRP Settlements (50m), mosque (150m), Brac CFS (200m); on the east side DRP Settlements (50m), mosque (30m) and on the west side U-drain (5m), DRP Settlements (30m), Mosque (60m), graveyard (400m), PHD health post (80m) are present on the surrounding target area.

Some degree of disturbance is anticipated due to construction activities to those components since they are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration route were nearly 2 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 02. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

Sub-project Location:

The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district. The sub-project area is located at 21.193973 N and 92.148408 E. The distance from the Upazila



headquarter is about 13 km. Nearby major road is Army road.

Land ownership

Land is owned by Government.

Expected construction period: 18 (Eighteen months)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

Project intervention area is found to be an open space, but influence area should consider nearly half a kilometer radius around the proposed site. Camp in Charge office is located on the north side. On the north side of the sub project DRP Settlements (70m), Mobile tower (300m), MSF Medical Center (350m); on the south side of the sub-project area DRP Settlements (50m), mosque (150m), Brac CFS (200m); on the east side DRP Settlements (50m), mosque (30m) and on the west side U-drain (5m), DRP Settlements (30m), Mosque (60m), graveyard (400m), PHD health post (80m) but there is no chance to disturbance during this construction activity.

But there is no scope to be affected by the construction activities. No structures, trees and livelihood will be affected by this construction activity. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby.

Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

Section B: Environmental Screening

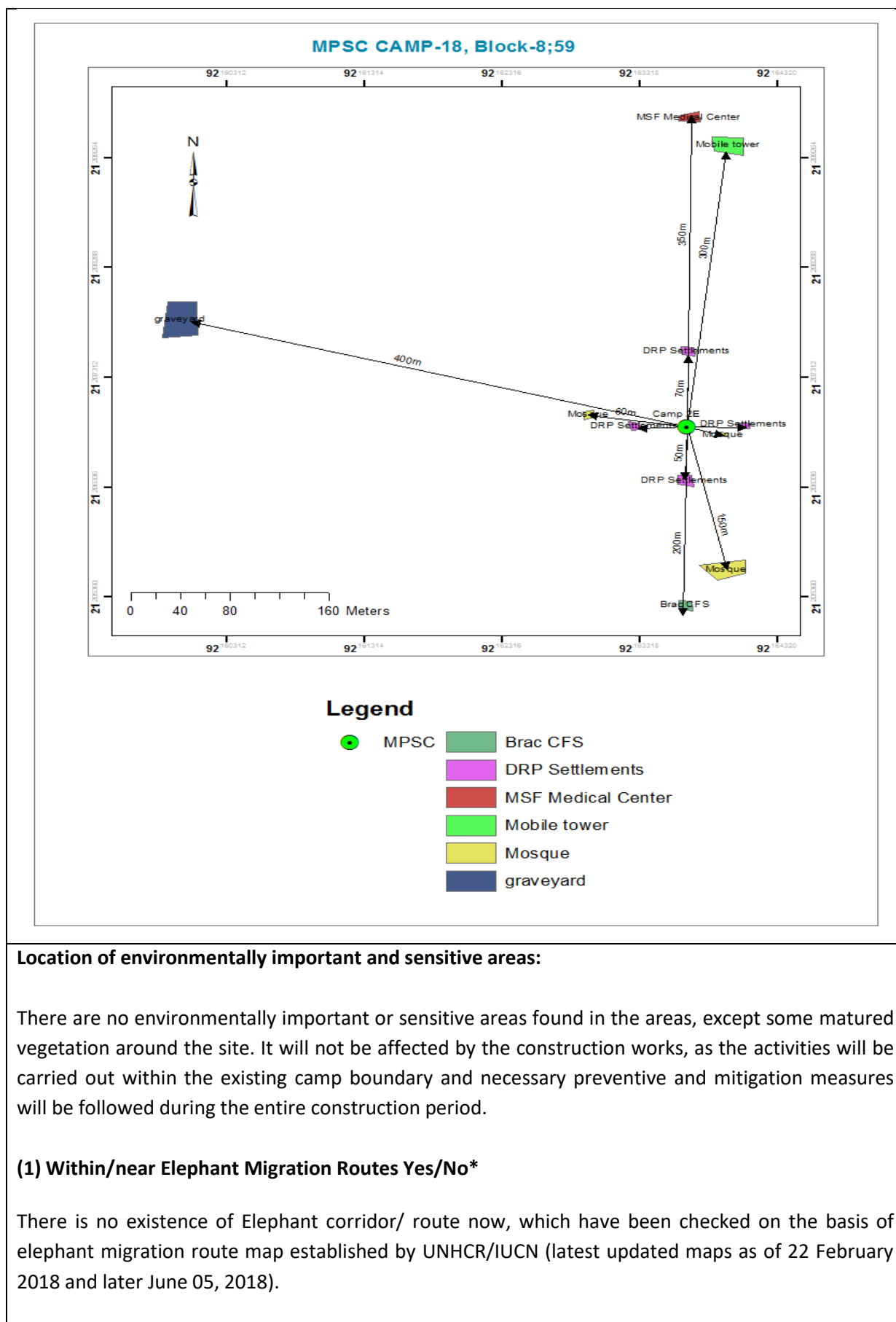
B.1: Environmental feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

On the north side of the sub project DRP Settlements (70m), Mobile tower (300m), MSF Medical Center (350m); on the south side of the sub-project area DRP Settlements (50m), mosque (150m), Brac CFS (200m); on the east side DRP Settlements (50m), mosque (30m) and on the west side U-drain (5m), DRP Settlements (30m), Mosque (60m), graveyard (400m), PHD health post (80m).

There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.



(2) potential impacts on remaining forests in/around camps Yes/No

N/A (This activity will be ensured in DRP community and within existing camp boundary)

(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:
Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation):

N/A (the sub-project will be constructed in a plain land and within an identified camp boundary)

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 700 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2019). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to



681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)
Status of wildlife movement:
N/A (None of the information was found about the wildlife movement in or across the area)
State of forestation:
Patches of vegetation containing large and matured trees on all edges of the proposed subproject area are located within 200m radial distance.
Summary of water balance analysis (For water supply scheme only):
N/A

B.2: Pre construction Phase

Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable):
HBB Army road is passing on the east side of the sub-project. It is possible to carry the construction materials on this road to the construction site.
Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:
Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.
Possible location of labor camps:
Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.
Requirement and type of raw materials (e.g. sand, stone, wood, etc.):
i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes viii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and ix) clay are the most common type of building material used in construction.
Identification of access road for transportation (Yes/No):
HBB Army road is passing on the east side of the sub-project. It is possible to carry the construction materials on this road to the construction site.
Location identification for raw material storage:
Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with CiC authority.
Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 200 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period.

Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

Around 3753 sq. feet land is required for the sub-project establishment.

There is reasonable vegetation around the sup-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No pre-existing drainage channel is found. Though a marshy land is found outside of the construction area, but will not be affected because of having a fair distance from the construction site and the adoption of proper construction site management practices.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by

induced development: (High/Medium/Low with description)

Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase
Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

Low. The proposed multipurpose community and service center will be equipped with full facilities for conducting multipurpose services to targeted people, including separate toilets (sanitary) for male and female persons, water supply and filtration, storage and other facilities. No fecal sludge

will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be produced in a typical day and higher amount of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC authority should be made aware of this separation and disposal procedure.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

During the operation phase, this Multipurpose Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There is no protected area in or around the project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

The proposed site is located inside the camp area. A HBB road connects the sites with Army road. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc.



therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere.	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. - Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of students, children,	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC. - Proper covering of dust producing materials with polythene sheet,	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	animals, etc.)		• Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. • Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is Medium	• Water spraying at the demolition site • Fencing / Installing barriers should be shield from dust and aggregates • Avoid usage of machines/equipment with extra noise; • Do not accumulate and burn waste at the site • Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders • It needs to Identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies • Make mandatory the use of safety gears (helmets, safety belts, masks, gloves and boot) by workers depending on nature of work.	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.			
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	Under the sub-project intervention, the overall score is low.	- Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. - Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity; Waste disposal record.	Prior to the start of Construction works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. Camp and working areas are to be kept clean and tidy at all times.			
	Accidents	Under the sub-project intervention, the overall score is low.	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. - Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc. should be available in the site during construction period.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score is low.	- Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage. - Involve the community in planning the work program so that any particularly noisy or otherwise invasive activities can be scheduled to avoid sensitive times. - Avoid using of construction equipment	Contractor, environmental specialist of D&SC	Number of complaints from stakeholders, Use of silencers in noise producing equipment	Daily



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			producing excessive noise at school time & at night. • Ear protection devices for the workers & site staffs should be available in site during construction period.		and sound barriers, Noise Level following decibel meter (dB)	
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.	Under the sub-project intervention, the overall score is low.	• Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. • Use tarpaulins to cover soils, sand and other loose material when transported by trucks. • Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free. • Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). • Limiting speed of construction vehicles in work sites to maximum of 20 km/h. • Regular monitoring of air quality.	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution control devices, Maintain records	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	- Prohibit employees from cutting of trees for firewood. - If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. - Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	- Prevent excessive noise; - Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); - No fires permitted on site except if needed for the construction works; - Staff must be trained up for operating equipment, - Availability and access to first-aid equipment and medical supplies. - Ensure the presence and use of safety gear at site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets, Uniforms etc., - Ensure adequate supply of drinking water.	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at project location;	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Sanitation facilities for male & female workers separately.			
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - All affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; - All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; - The contractor must arrange the cancellation of all temporary services;	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works
	Odor& waste disposal	Under the issue the overall score is low.	Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and PMU	Complaints from communities	Site inspection daily / weekly basis.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Vegetation	Under the issue the overall score is low.	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions;	Over the completion of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turfing, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required. Mention some recommendation on E&S assessment ESMP*

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.



Appendix-2

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Construction of 22 Multipurpose Service Center Steel Frame Building (LGED/EMCRP-W4): MPSC of Rohingya Camp-18, Block-8/59

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of	Selected site will be far away from any water bodies or	PIU & Contractor	Environmental Consultant of PIU,



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	natural drainage	natural flow path to avoid the flash flood or any kind or surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.		PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	- Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. - It will be ensured that proper training and guidance are provided on general and occupational health and safety to Contractors' personnel and labors forces, and records of	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		training sessions are to be kept on site. All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. - Adequate facilities ensuring sanitation for labor camps will	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		be put in place. - Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labour forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared time to time for all types of work activities on site. - Proper walkways will be prepared for students and teachers in existing school boundary. - Proper Signpost at any slippery areas will be ensured in construction site.	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. - Adequate quantities of drinking water will be available at all		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Maintenance of assets, properties and	Periodic maintenance of building structures, plumbing, water filtering and electric equipment has to be carried out.	The party CiC find fit	UNO, Upazila Chairman of Upazila



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	equipment	- Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.		Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization works:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.



- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.
- Kitchen space disassembling must be treated with same level of accuracy and caution.
- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.



For wastes generated from construction and demobilization debris:

- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.
- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.
- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site.
- Burning of any type of wastes in the construction site shall be prohibited completely.

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Appendix-3

Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 20,000	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles	LS	LS @ Tk 30,000	30,000
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	2 nos.	@10,000 each	20,000
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as	2 no.	LS @ Tk. 30,000	60,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.			
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. The Safeguard personnel will take duty for 11 sites, so one-eleventh of the personnel cost is counted here.	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months (1/11 one site). (Net payment excluding Tax & VAT)	57,272.73
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73

**Cost of H&S Measures under COVID 19 Situations**

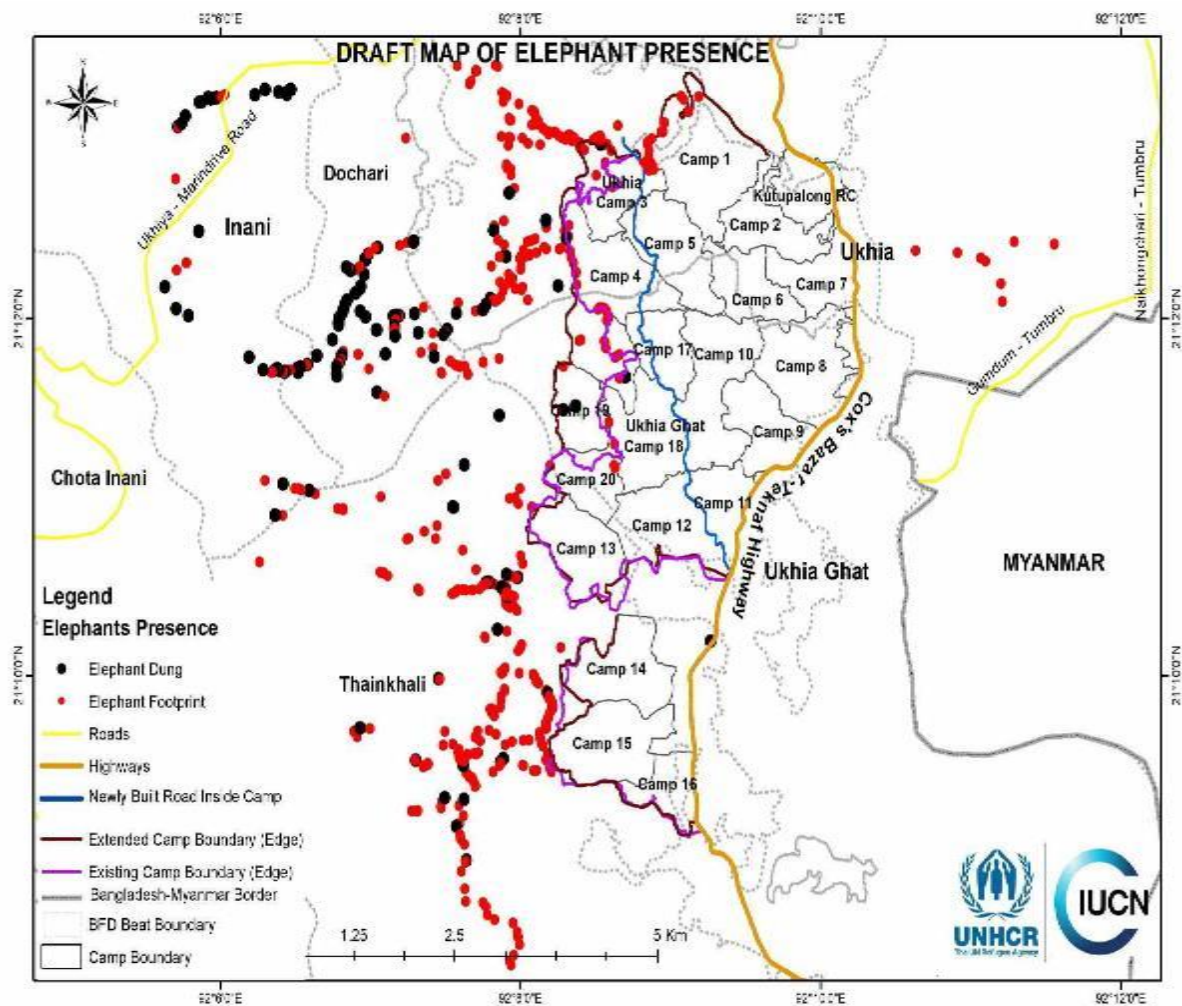
Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for	2 bottles and 1 Can for each	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office



Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
	Refill)	site						
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						165,125.00	

Appendix-4



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

জগন্নাথ ভিত্তিতে রোহিঙ্গা সংকট মোকাবেলায় যান্ত্রিক সেবায় প্রকল্প

Local Government Engineering Department (LGED)

Public Consultation Participants List

Focus Group Discussion

সময়: ৩:৩০

তারিখ: ০৭.০২. ২১

উপ-প্রকল্প/কম্পোনেন্ট এর নাম: MPSC - Camp - 18, Block - A; Sub Block - H50

মত বিনিময় স্থান: মৌলভীবাজার জেলা প্রশাসন

ইউনিট/কোড: ৩৫০০ নং:

আয়োজক: বাংলাদেশ সরকার

উপস্থিতি: ১০ জন

জেলা: কক্সবাজার

সব প্রকল্পের নং: EMCRP/W-4

অংশগ্রহণকারীদের তালিকা (পরিচয় ও স্বাক্ষর)

ক্রম নং	নাম	বয়স	পুরুষ/নারী	গ্রাম	স্বাক্ষর / চিহ্নসহ
১	মোঃ আবদুল মালিক	৩৮	পুরুষ	camp-18	মোঃ আবদুল মালিক
২	আবদুল মালিক	৪২	"	"	২৪
৩	আবদুল মালিক	৫০	"	"	৫৫
৪	মোঃ আবদুল	৭০	"	"	৫৫
৫	মোঃ আবদুল	৪০	"	"	৫৫
৬	আবদুল মালিক	৪০	"	"	৫৫
৭	আবদুল মালিক	২০	"	"	৫৫
৮	মোঃ আবদুল	২৫	"	"	৫৫
৯	আবদুল মালিক	৪২	"	"	৫৫
১০	মোঃ আবদুল	৩৫	"	"	৫৫
১১	আবদুল মালিক	২৭	"	"	৫৫
১২	মোঃ আবদুল	২২	"	"	৫৫
১৩	মোঃ আবদুল	৫০	"	"	৫৫

Public consultation participant list



Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762

IDA Credit No. 5561-BD



ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-19, Block-C, Type-02

Union: Palongkhali; Upazila: Ukhiya
District: Cox's Bazar

Funded by:



Government of the People's Republic of Bangladesh & World Bank

Design and Supervision Consultancy:



Development Design Consultants Ltd.

March 2021

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
DAM	Dhaka Ahsania Mission
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling

LGED	Local Government Engineering Department
MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank



1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Service Centers are to offer the facilities which will improve the availability.

These Multipurpose Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which are identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multipurpose Community and Service Center (MPSC) will be constructed under Palongkhali union in Rohingya camp number 19 of Ukhiya Upazila under Cox's Bazar district. The catchment area of the subproject comprises the surrounding area of Rohingya camp 19. Typical camp settlement settings of the area are no exception than other camp locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya Camp-19, Block-C
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
Owner of land	Government
Land Available (sqft.)	4500
Structural Design Option	Type-02 (Rectangular Steel Frame 2-storey building (90 feet x 42 feet 5 inches)
Catchment area	Camp-19
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	LGED/ADB Road connecting camp 19 with Cox's Bazar-Teknaf Highway
Land acquisition	Not required
Current land condition	The location is an open space and used as playground

[D&SC and Field survey, 2021]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-19; Block-C		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3,742.47
Number of Floors	2	3,742.47 X2
Number of Class room (sq. feet)	3	each@ 14'-11" X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.



1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-19, Block-C of Ukhiya Upazila in Cox's Bazar District. The site location is relatively a low land but accessible through vehicles as of 11 feet wide HBB road is present near the site which connects with main road. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
GPS position	21.18090°N and 92.14466°E
Distance from Upazila HQ	9 km
Nearby major road	Cox's Bazar- Teknaf highway
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2021]

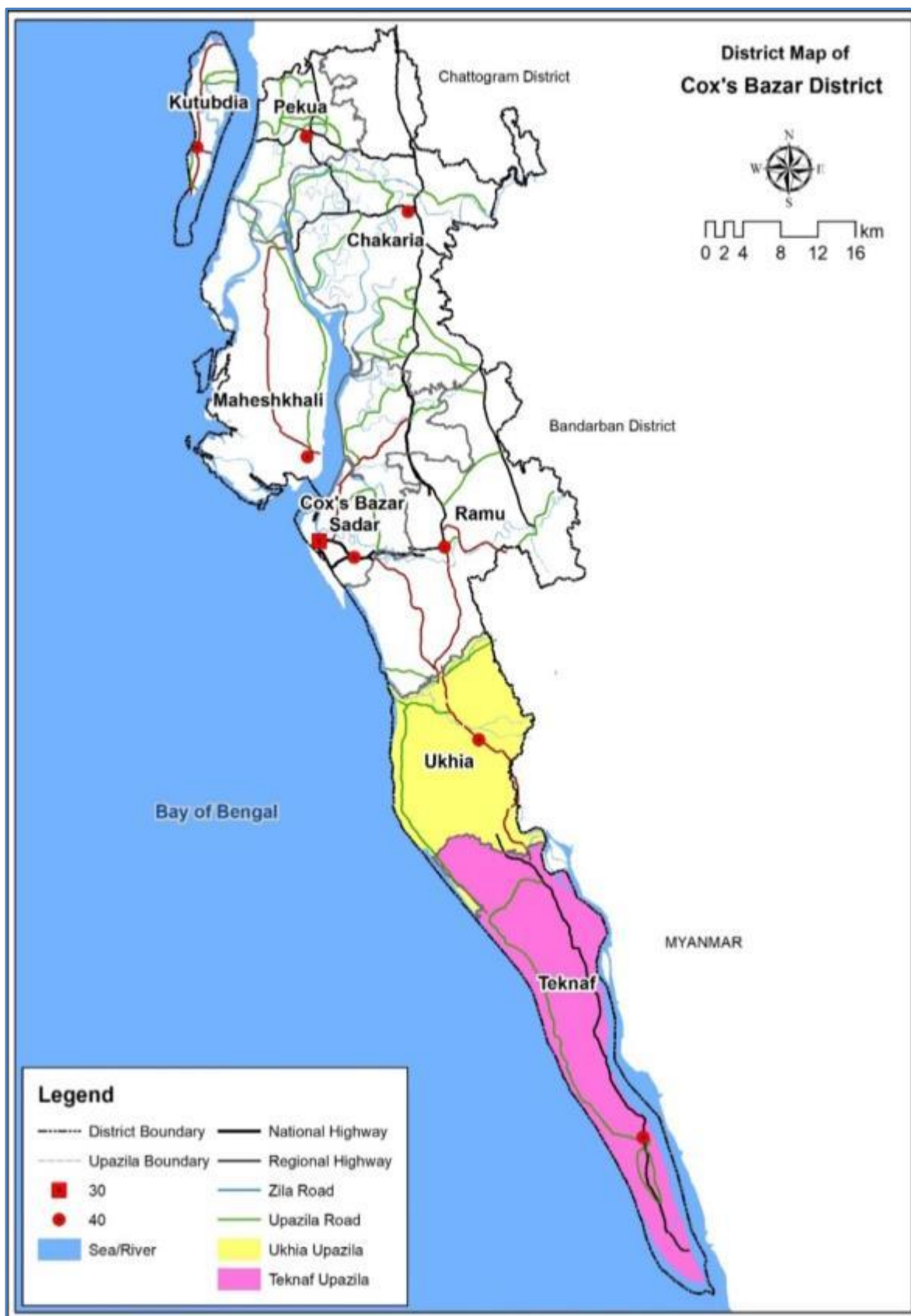


Figure 1.3.1: District Map with project location

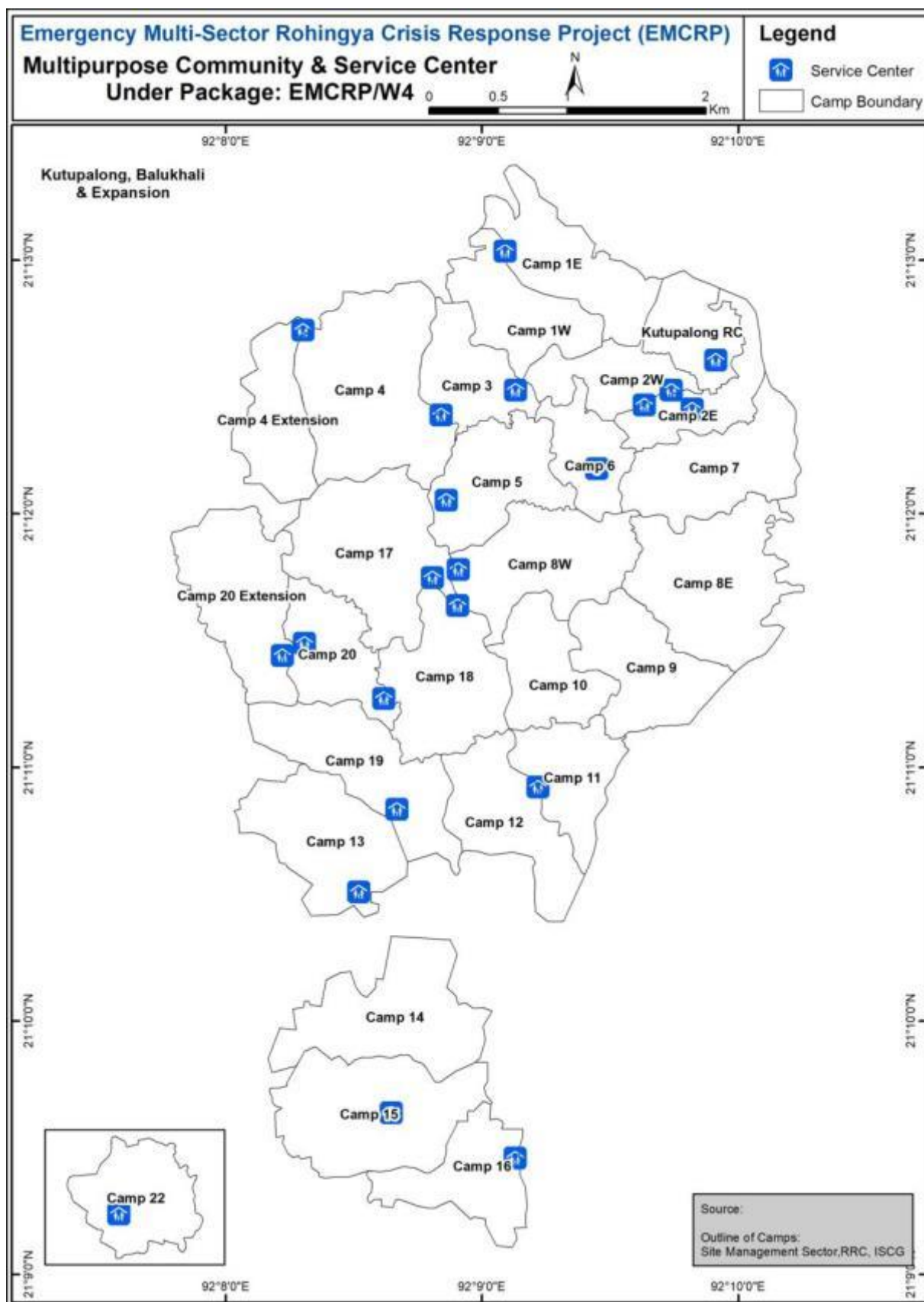


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)

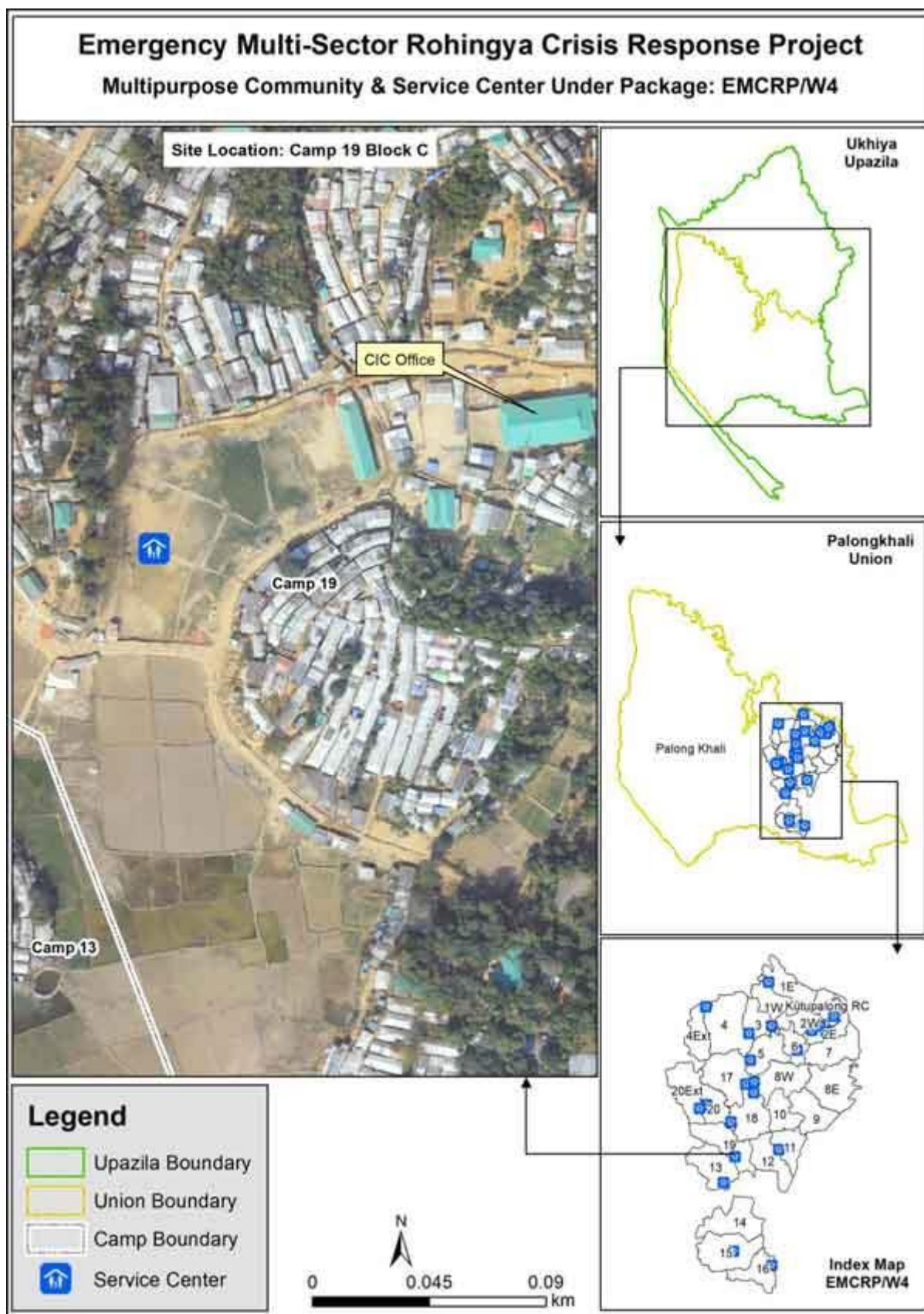


Figure 1.3.3: Union Map with Sub-project location in Camp area

1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	Mosque(10m), Mosque (NE 60m), DAM (70m), Graveyard(350m), DAM Health Clinic (80m NE)
South side	Mosque(50m), 3 numbers of DAM School (80m,90m, 100m) Red Crescent Health Clinic (SE 300m)
East side	Mosque (30m), Mosque (40m), Mosque(30m), DAM School (NE 40m), World Vision Adolescent Center(50m)
West side	Mosque(50m), Mosque(60m), Friendship School (20m)

[Sources of data: D&SC Field survey, 2021]



Figure 1.4: Proposed location of MPSC construction

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 14 February 2021 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 17 persons, and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location in particular has no major complications and is in relevance with the CiC office authority currently. Present Camp in Charge has suggested to start the development works as early as possible.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Rohingya Camp 19; Block-C and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Consultation with CiC Authority



Consultation with DRP Community

Figure 2.1.1: Public Consultation Meeting in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people considered that the selected site is suitable for the construction of Multipurpose service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.
- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.
- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.
- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine

which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 14 February 2021 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Community Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected sited allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. North Side Mosque(10m), Mosque (NE 60m), DAM (70m), Graveyard(350m), DAM Health Clinic (80m NE); South Side Mosque(50m), 3 numbers of DAM School (80m,90m, 100m) Red Crescent Health Clinic (SE 300m); East Side Mosque (30m), Mosque (40m), Mosque(30m), DAM School (NE 40m), World Vision Adolescent Center(50m); West Side Mosque(50m), Mosque(60m), Friendship School (20m). Few disturbance to some of these establishments/features is anticipated due to construction activities for the case of not being in a sufficient distance from the construction site which is why safety measures such as, strict construction site management system- including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials et cetera should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from piling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from piling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routs and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the

mitigation options, different initiatives have been undertaken, such as formation and capacity development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones, as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree planation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones has been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tube well in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose Community and Service Center will be constructed on a high land where some matured vegetation is found. Due to the construction activities of this Sub-project, no trees (small and medium size) will be cut down however as a mitigation measures, few plantation works can be introduced in the site. During the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall effects for this proposed construction works are minimized to its least level

and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.

- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.
- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures are being realized over time. A comprehensive monitoring framework is suggested in Project ESMF and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the

environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguard's specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the

backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.
- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.

Appendix-1**Environmental Screening Form**

Sub-Project Description Form: (MPSC of Rohingya camp-19, Block-C)

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Ukhiya

Union: Palongkhali

Name of Community/Local Area: Palongkhali, Rohingya Camp-19

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose community and Service Center Steel Frame 2-storey building will be constructed within target location.

Estimated footprint / land area for this sub-project is 3742.47 sq. meter

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.): Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified location on Rohingya camp area. On the North Side Mosque(10m), Mosque (NE 60m), DAM (70m), Graveyard(350m), DAM Health Clinic (80m NE); South Side Mosque(50m), 3 numbers of DAM School (80m,90m, 100m) Red Crescent Health Clinic (SE 300m); East Side Mosque (30m), Mosque (40m), Mosque(30m), DAM School (NE 40m), World Vision Adolescent Center(50m); West Side Mosque(50m), Mosque(60m), Friendship School (20m). Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to demolition of an old building and later construction of a new building on the same place. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic. Human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified. North Side Mosque(10m), Mosque (NE 60m), DAM (70m), Graveyard(350m), DAM Health Clinic (80m NE); South Side Mosque(50m), 3 numbers of DAM School (80m,90m, 100m) Red Crescent Health Clinic (SE 300m); East Side Mosque (30m), Mosque (40m), Mosque(30m), DAM School (NE 40m), World Vision Adolescent Center(50m); West Side Mosque(50m), Mosque(60m), Friendship School (20m) are present on the surrounding target area.

Some degree of disturbance is anticipated due to construction activities to those components since they are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration route is present nearly 2 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 02. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

Sub-project Location:

The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district. The sub-project area is located at 21.18090° N and 92.14466° E. The distance from the Upazila headquarter is about 9 km. Nearby major road is Cox's Bazar- Teknaf highway.

Land ownership

Land is owned by Government.

Expected construction period: 18 (Eighteen months)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

Project intervention area is found to be an open space, but influence area should consider nearly half a kilometer radius around the proposed site.

North Side Mosque(10m), Mosque (NE 60m), DAM (70m), Graveyard(350m), DAM Health Clinic (80m NE); South Side Mosque(50m), 3 numbers of DAM School (80m,90m, 100m) Red Crescent Health Clinic (SE 300m); East Side Mosque (30m), Mosque (40m), Mosque(30m), DAM School (NE 40m), World Vision Adolescent Center(50m); West Side Mosque(50m), Mosque(60m), Friendship School (20m) but there is no chance to disturbance during this construction activity.

But there is no scope to be affected by the construction activities. No structures, trees and livelihood will be affected by this construction activity. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby. However, during construction period air pollution and waste should be considered otherwise surrounding features may indulge impacts.

Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

Section B: Environmental Screening

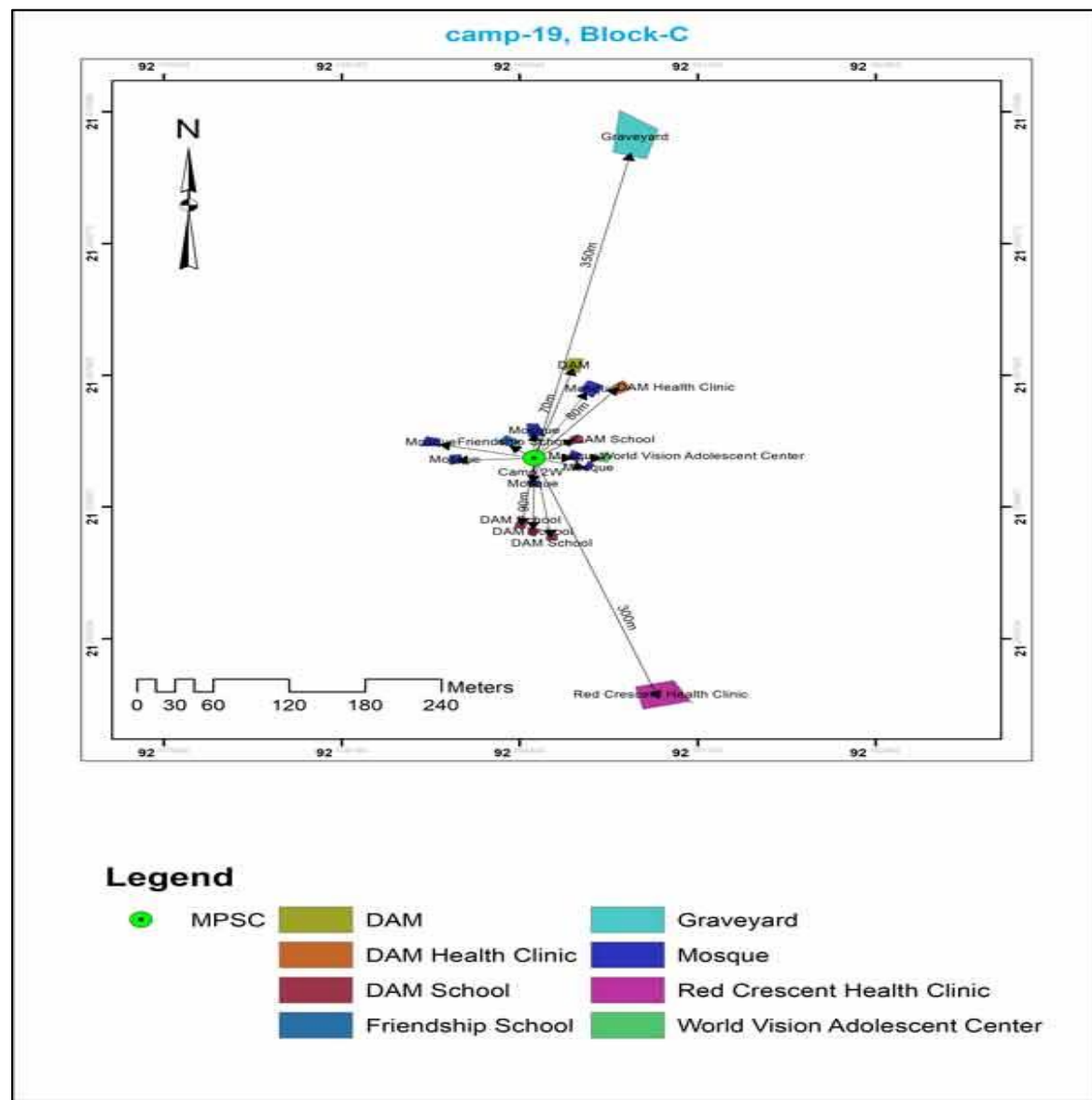
B.1: Environmental feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

North Side Mosque(10m), Mosque (NE 60m), DAM (70m), Graveyard(350m), DAM Health Clinic (80m NE); South Side Mosque(50m), 3 numbers of DAM School (80m,90m, 100m) Red Crescent Health Clinic (SE 300m); East Side Mosque (30m), Mosque (40m), Mosque(30m), DAM School (NE 40m), World Vision Adolescent Center(50m); West Side Mosque(50m), Mosque(60m), Friendship School (20m)

There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.



Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some DRP settlements around the site. Several mosques, madrasa and school were found during the survey. Those will not be affected by the construction works, as the activities will be carried out within the existing selected boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

(1) Within/near Elephant Migration Routes Yes/No*

There is no existence of Elephant corridor/ route now, which have been checked on the basis of elephant migration route map established by UNHCR/IUCN (latest updated maps as of 22 February 2018 and later June 05, 2018).

(2) potential impacts on remaining forests in/around camps Yes/No

N/A (This activity will be ensured in DRP community and within existing camp boundary)

(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:
Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation): N/A (the sub-project will be constructed in a plain land and within an identified camp boundary)
Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH): Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 800 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2019). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer. Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)
Status of wildlife movement: N/A (None of the information was found about the wildlife movement in or across the area)
State of forestation: Patches of vegetation containing large and matured trees across the road side of the proposed subproject area are located within 200m radial distance.
Summary of water balance analysis (For water supply scheme only): N/A

B.2: Pre construction Phase

Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable): A HBB road is passing on the north and west side of the sub-project. It is possible to carry the construction materials on this road to the construction site.
Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction: Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.
Possible location of labor camps: Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.
Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes viii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and ix) clay are the most common type of building material used in construction.

Identification of access road for transportation (Yes/No):

A HBB road is passing on the north and west side of the sub-project. It is possible to carry the construction materials on this road to the construction site.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with CiC authority.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 200 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period.

Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

Around 3742.47 sq. feet land is required for the sub-project establishment.

There is reasonable vegetation around the sup-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate



stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.
Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation) Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.
Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description) No pre-existing drainage channel is found. Though a marshy land is found outside of the construction area, but will not be affected because of having a fair distance from the construction site and the adoption of proper construction site management practices.
Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description) Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.
Activities that can lead to landslides, slumps, slips and other mass movements in road cuts: The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description) N/A
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles: During the operation phase of this subproject, small amount of dust and exhaust gas might be

produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

Low. The proposed multipurpose community and service center will be equipped with full facilities for conducting multipurpose services to targeted people, including separate toilets (sanitary) for male and female persons, water supply and filtration, storage and other facilities. No fecal sludge will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be produced in a typical day and higher amount of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC authority should be made aware of this separation and disposal procedure.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

During the operation phase, this Multipurpose Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.

**Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)**

There is no protected area in or around the project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

The proposed site is located inside the camp area. A HBB road connects the sites. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc. therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere.	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. - Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	students, children, animals, etc.)		• Proper covering of dust producing materials with polythene sheet, • Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. • Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is Low	• Water spraying at the demolition site • Fencing / Installing barriers should be shield from dust and aggregates • Avoid usage of machines/equipment with extra noise; • Do not accumulate and burn waste at the site • Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders • It needs to Identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- Make mandatory the use of safety gears (helmets, safety belts, masks, gloves and boot) by workers depending on nature of work. - Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.			
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	Under the sub-project intervention, the overall score is low.	- Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. - Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. - Provision of waste bins/ cans, where	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity; Waste disposal record.	Prior to the start of Construction works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times.			
	Accidents	Under the sub-project intervention, the overall score is low.	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. - Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc. should be available in the site during construction period.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score is low.	- Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage. - Involve the community in planning the work	Contractor, environmental specialist of D&SC	Number of complaints from stakeholders, Use of silencers	Daily



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			program so that any particularly noisy or otherwise invasive activities can be scheduled to avoid sensitive times. • Avoid using of construction equipment producing excessive noise at school time & at night. • Ear protection devices for the workers & site staffs should be available in site during construction period.		in noise producing equipment and sound barriers, Noise Level following decibel meter (dB)	
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation	Under the sub-project intervention, the overall score is low.	• Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. • Use tarpaulins to cover soils, sand and other loose material when transported by trucks. • Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free. • Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). • Limiting speed of construction vehicles in work sites to maximum of 20 km/h.	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution control devices, Maintain	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	measures.		Regular monitoring of air quality.		records	
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	- Prohibit employees from cutting of trees for firewood. - If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. - Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	- Prevent excessive noise; - Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); - No fires permitted on site except if needed for the construction works; - Staff must be trained up for operating equipment, - Availability and access to first-aid equipment and medical supplies. - Ensure the presence and use of safety gear at site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets,	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at project location;	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Uniforms etc., - Ensure adequate supply of drinking water. - Sanitation facilities for male & female workers separately.			
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - All affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; - All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; - The contractor must arrange the cancellation of all temporary services.	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works
	Odor& waste disposal	Under the issue the overall score is low.	Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and PMU	Complaints from communities	Site inspection daily / weekly basis.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Vegetation	Under the issue the overall score is low.	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions;	Over the completion of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turving, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required. Mention some recommendation on E&S assessment ESMP*

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.

**Appendix-2****Environmental and Social Management Plan (ESMP) of this Sub project (site specific)**

ESMP for Construction of 22 nos. Multipurpose Community and Service Center Steel Frame Building (LGED/EMCRP-W4): MCSC of Rohingya Camp-19, Block-C

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	- Selected site will be far away from any water bodies or natural flow path to avoid the flash flood or any kind or surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.	PIU & Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	- Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. - It will be ensured that proper training and guidance are provided on general and occupational health and safety to	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Contractors' personnel and labors forces, and records of training sessions are to be kept on site. All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling.	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Adequate facilities ensuring sanitation for labor camps will be put in place. - Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labour forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation,	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared time to time for all types of work activities on site. - Proper walkways will be prepared for students and teachers in existing school boundary. - Proper Signpost at any slippery areas will be ensured in	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	mobile plant and vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	construction site. - Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration.		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Adequate quantities of drinking water will be available at all Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation &	Maintenance of assets,	Periodic maintenance of building structures, plumbing,	The party CiC	UNO, Upazila



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Maintenance	properties and equipment	water filtering and electric equipment has to be carried out. - Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.	find fit	Chairman of Upazila Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.



- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.
- Kitchen space disassembling must be treated with same level of accuracy and caution.
- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.

For wastes generated from construction and demobilization debris:

- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.



- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.
- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site;
- Burning of any type of wastes in the construction site shall be prohibited completely.

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Appendix-3

Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 20,000	20,000
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal	LS	LS @ Tk 30,000	30,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles			
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	2 nos.	@10,000 each	20,000
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all	2 no.	LS @ Tk. 30,000	60,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	complete as per satisfaction and direction of the Engineer-in-charge.			
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. The Safeguard personnel will take duty for 11 sites, so one-eleventh of the personnel cost is counted here.	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months (1/11 one site). (Net payment excluding Tax & VAT)	57,272.73
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73

**Cost of H&S Measures under COVID 19 Situations**

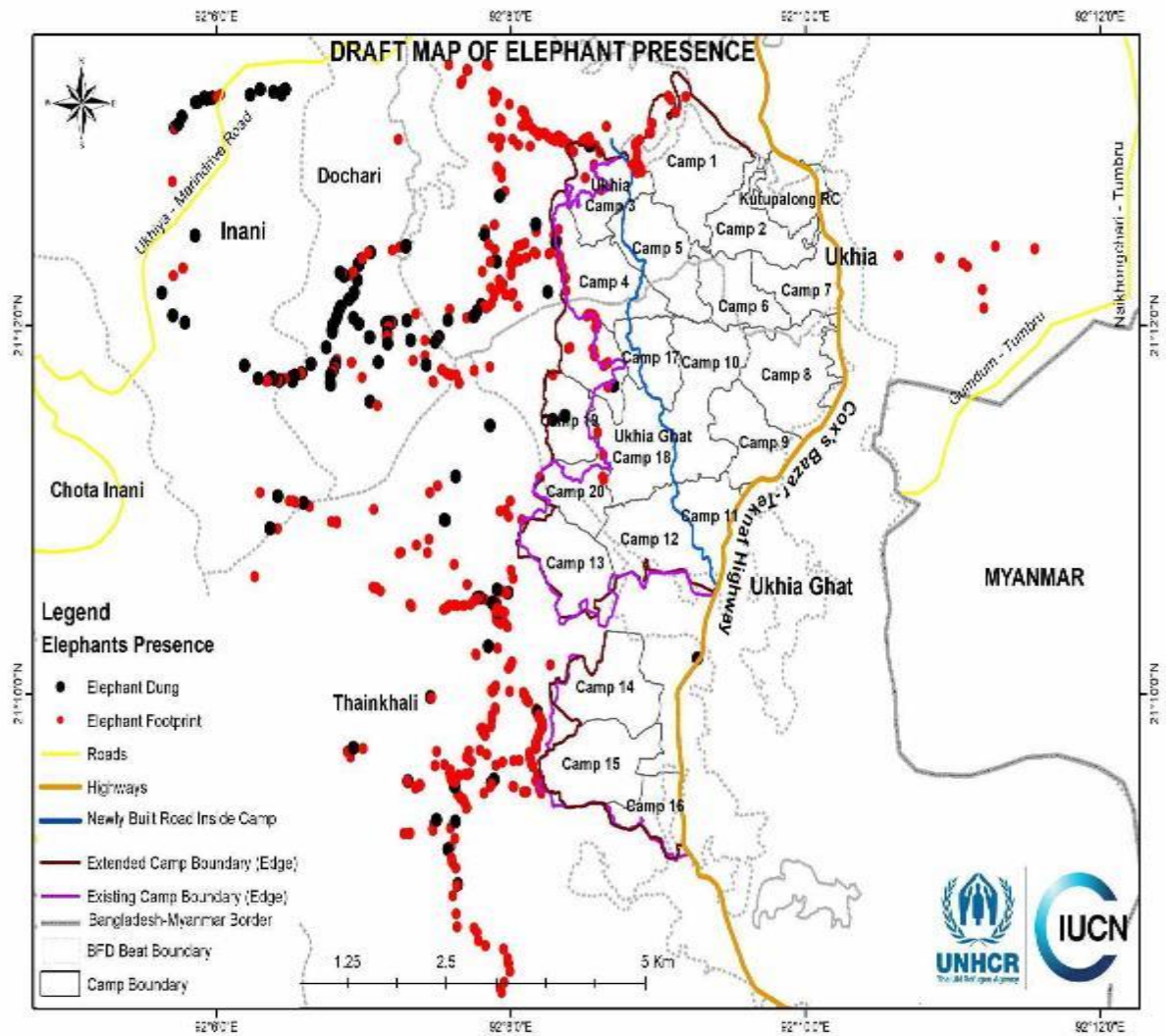
Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for	2 bottles and 1 Can for each	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office



Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
	Refill)	site						
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						165,125.00	

Appendix-4



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)
 লক্ষ্যে তালিকা প্রদান করা হয়েছে যাতে করে
 Local Government Engineering Department (LGED)
 Public Consultation Participants List

Focus Group Discussion

তারিখ: ১১/১১/১৮
 প্রকল্প/অংশ: ১১/১১/১৮ - Camp-17, Block-C
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Public consultation participant list



Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762

IDA Credit No. 5561-BD



ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-20,
Block-M8, Type-2
Union: Palongkhali; Upazila: Ukhiya
District: Cox's Bazar

Funded by:



Government of the People's Republic of Bangladesh & World Bank

Design and Supervision Consultancy:



Development Design Consultants Ltd.

March 2021

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department

MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank

1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Community and Service Centers are to offer the facilities which will improve the availability.

These Multipurpose Community and Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which are identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multipurpose Community and Service Center (MPSC) will be constructed under Palongkhali Union in Rohingya camp number 20, Block M8 of Ukhiya Upazila under Cox's Bazar district. The catchment area of the subproject comprises the surrounding area of Rohingya camp 20. Typical camp settlement settings of the area are no exception than other

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

camp locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya Camp-20, Block-M8
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
Owner of land	Government
Land Available (sq.ft.)	5000
Structural Design Option	Type-2 (Rectangular Steel Frame 2-story building (90 feet x 41 feet 7 inches)
Catchment area	Camp-20
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	There is no direct route to connect the facility since it is inside camp location.
Land acquisition	Not required
Current land condition	The location is on an identified open space.

[D&SC and Field survey, 2020]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-20; Block-M8		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3753
Number of Floors	2	3753X2
Number of Class room (sq. feet)	3	each@ 14'-11" X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.

1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-20, Block-M8 of Ukhiya Upazila in Cox's Bazar District. The site location is relatively a high plain land and surrounded by hill. There are no critically sensitive areas on the targeted site. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Community and Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
GPS position	21.1878485 N and 92.1435959 E
Distance from Upazila HQ	15 km
Nearby major road	Camp connecting road
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2020]

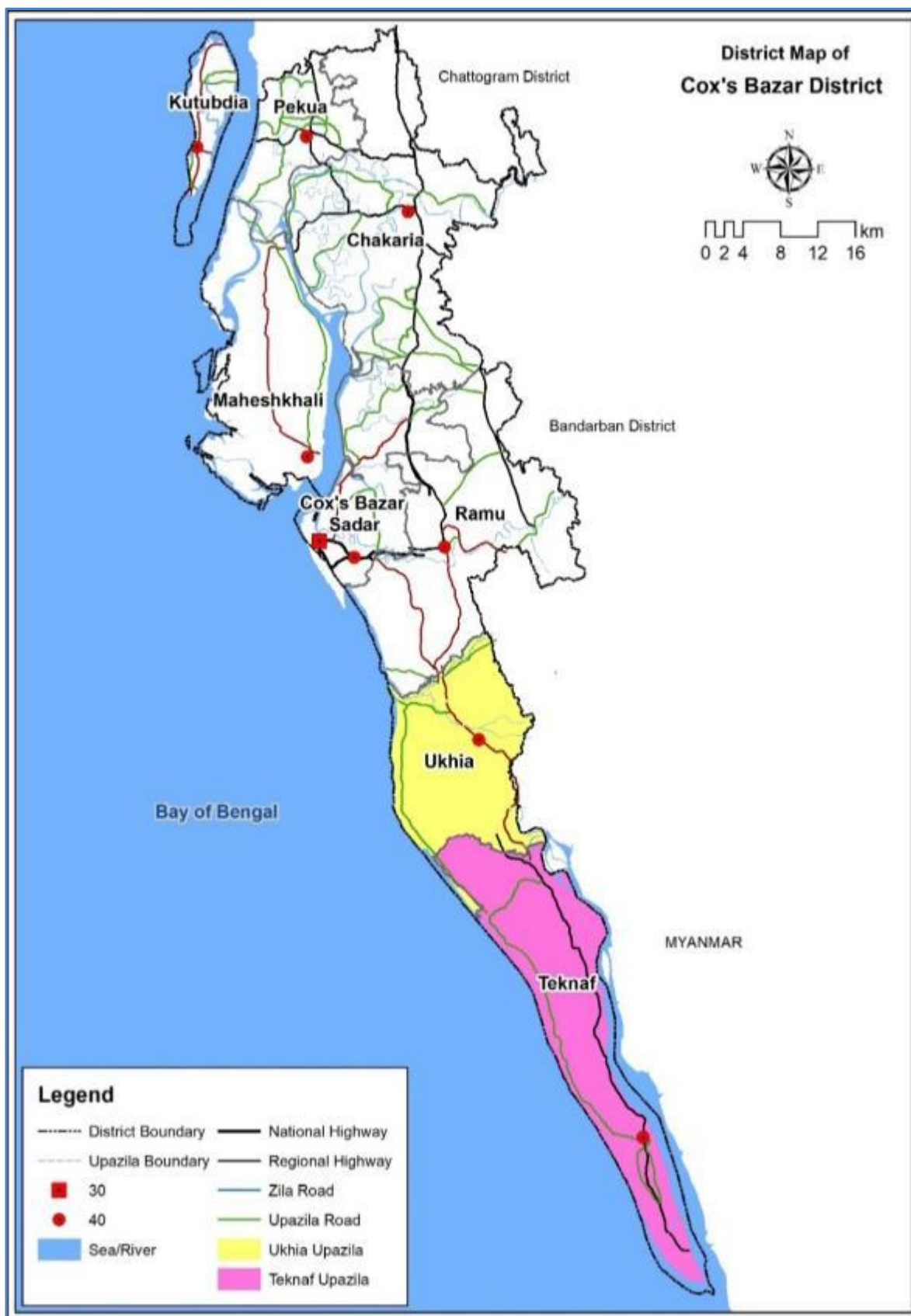


Figure 1.3.1: District Map with project location

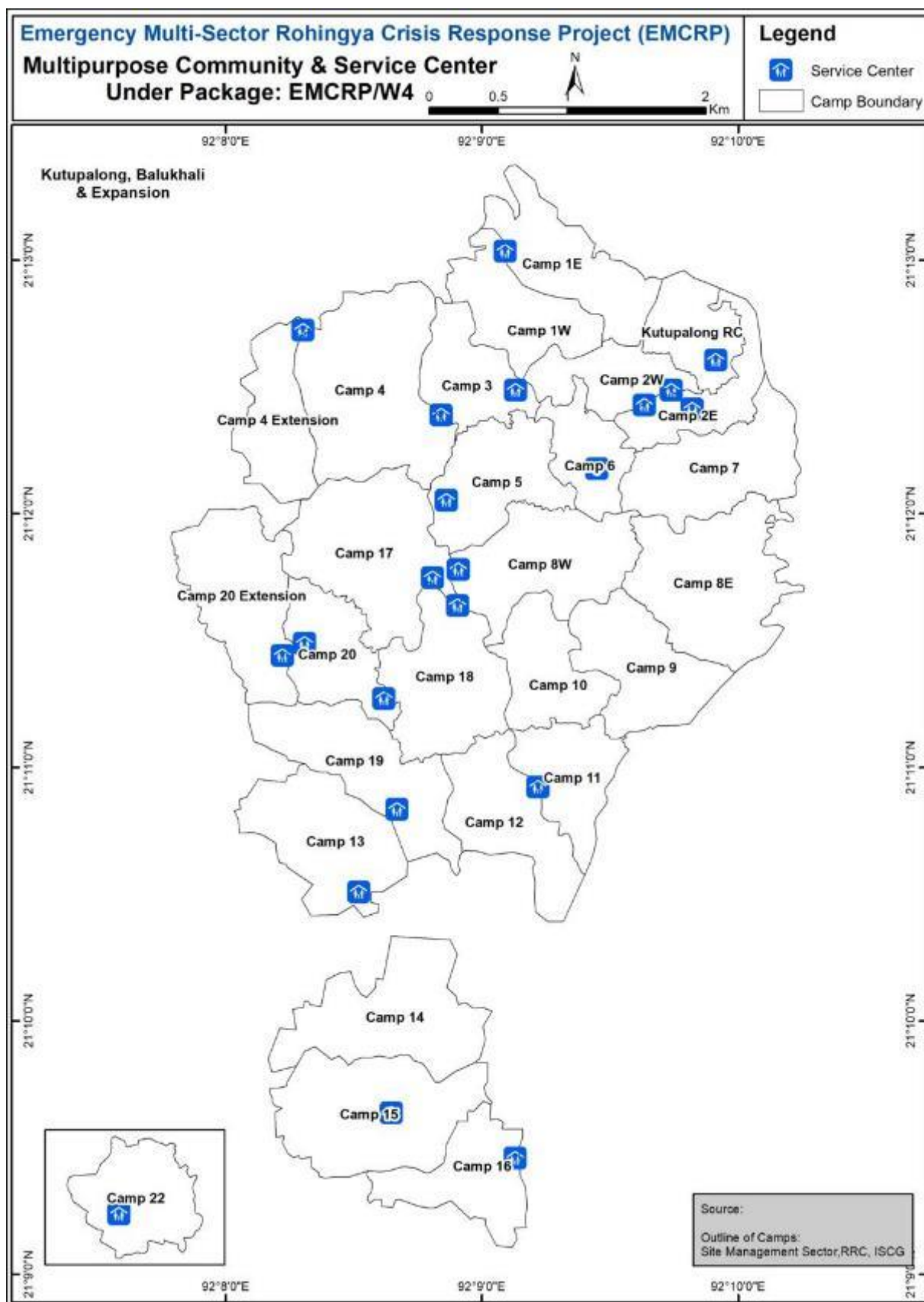


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)

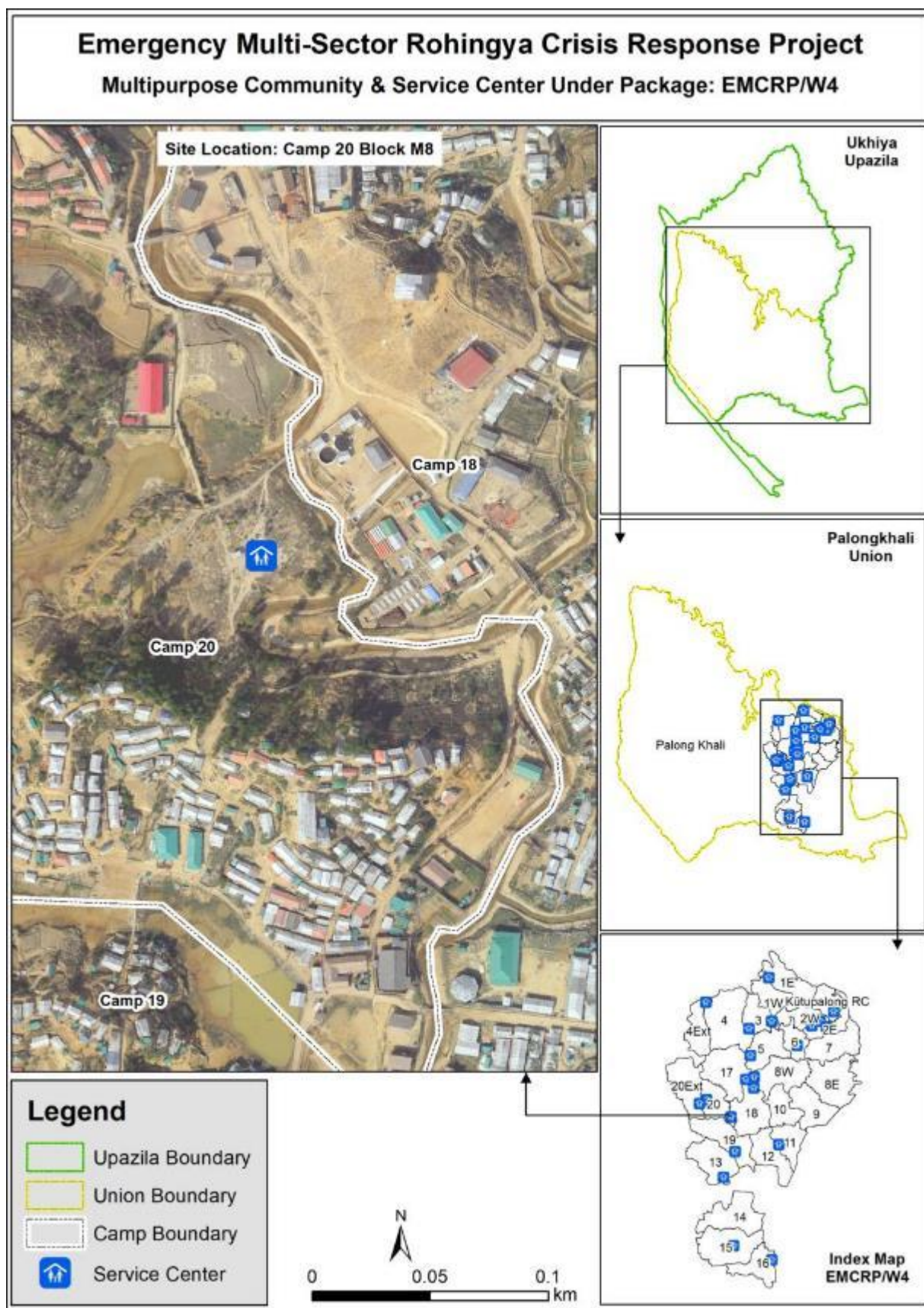


Figure 1.3.3: Union Map with Sub-project location in Camp area

1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	Gono Unnayan Kendra (GUK) office (60m), vegetation (25m)
South side	Uplands/hill (40m), DRP settlements (45m)
East side	Bamboo bridge (20m), DRP settlements (30m), upland/hill (80m)
West side	Upland/hill (35m)

[Sources of data: D&SC Field survey, 2020]



Figure 1.4.1: Present condition of the Sub-project area



Figure 1.4.2: Proposed location of MPSC construction

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 12 March 2020 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 13 persons, and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location in particular has no major complications and is in relevance with the CiC office authority currently. Present Camp in Charge (CiC) has suggested to start the development works as early as possible.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Rohingya Camp 20; Block-M8 and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Consultation with CiC authority



Consultation with DRP

Figure 2.1.1: Public Consultation Meeting in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people considered that the selected site is suitable for the construction of Multipurpose service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.
- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.
- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.
- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine

which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 12 March 2020 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected sited allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. On the north of the sub project Gono Unnayan Kendra (GUK) office at 60m, vegetation at 25m; on the south side of the sub-project area Uplands/hill at 40m, DRP settlements at 45m; on the east side Bamboo bridge at 20m, DRP settlements at 30m, upland/hill at 80m and on the west side Upland/hill at 35m. Few disturbance to some of these establishments/features is anticipated due to construction activities for the case of not being in a sufficient distance from the construction site which is why safety measures such as, strict construction site management system- including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials et cetera should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from piling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from piling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routs and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the

mitigation options, different initiatives have been undertaken, such as formation and capacity development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones, as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree planation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones have been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tubewell in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose Community and Service Center will be constructed on a high land where some matured vegetation is found. Due to the construction activities of this Sub-project, trees (small and medium size) will not be cut down as well as 10 nos. of trees will be planted in the target location. Further, some structures on the sub-project area might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall effects for this

proposed construction works are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.

- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.
- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures are being realized over time. A comprehensive monitoring framework is suggested in Project ESMF and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the

environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguards specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the

backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.
- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.

Appendix-1**Environmental Screening Form**

Sub-Project Description Form: (MPSC of Rohingya Camp-20, Block-M8)

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Ukhiya

Union: Palongkhali

Name of Community/Local Area: Palongkhali, Rohingya Camp-20.

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose community and Service Center Steel Frame 2-story building will be constructed within target location.

Estimated footprint / land area for this sub-project is 5000 sq. feet

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.): Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified location on Rohingya camp 20, Block M8 area. On the north of the sub project Gono Unnayan Kendra (GUK) office at 60m, vegetation at 25m; on the south side of the sub-project area Uplands/hill at 40m, DRP settlements at 45m; on the east side Bamboo bridge at 20m, DRP settlements at 30m, upland/hill at 80m and on the west side Upland/hill at 35m. Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the

ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated construction of a new building on the selected place. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic. Human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified. On the north of the sub project Gono Unnayan Kendra (GUK) office at 60m, vegetation at 25m; on the south side of the sub-project area Uplands/hill at 40m, DRP settlements at 45m; on the east side Bamboo bridge at 20m, DRP settlements at 30m, upland/hill at 80m and on the west side Upland/hill at 35m are present on the surrounding target area. Some degree of disturbance is anticipated due to construction activities to those components since they are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration routes were nearly 1 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 02. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

Sub-project Location:

The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district. The sub-project area is located at 21.1878485 N and 92.1435959 E. The distance from the Upazila headquarter is about 15 km.

Land ownership

Land is owned by Government.



Expected construction period: 18 (Eighteen months)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

Project intervention area is found to be an open space, but influence area should consider nearly half a kilometer radius around the proposed site.

On the north of the sub project Gono Unnayan Kendra (GUK) office at 60m, vegetation at 25m; on the south side of the sub-project area Uplands/hill at 40m, DRP settlements at 45m; on the east side Bamboo bridge at 20m, DRP settlements at 30m, upland/hill at 80m and on the west side Upland/hill at 35m but there is no chance to disturbance during this construction activity.

But there is no scope to be affected by the construction activities. No structures, trees and livelihood will be affected by this construction activity. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby.

Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

Section B: Environmental Screening

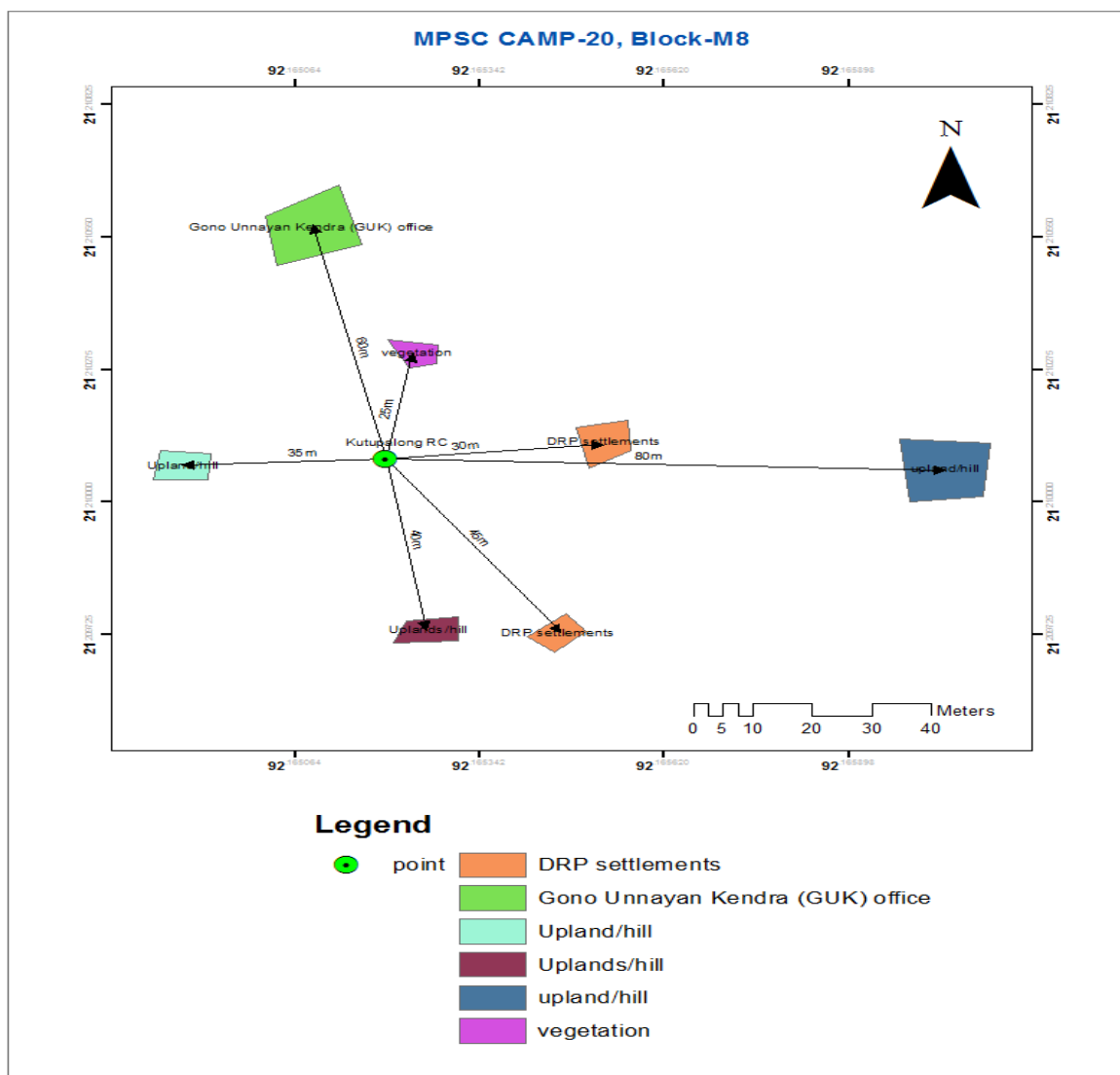
B.1: Environmental feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

On the north of the sub project Gono Unnayan Kendra (GUK) office at 60m, vegetation at 25m; on the south side of the sub-project area Uplands/hill at 40m, DRP settlements at 45m; on the east side Bamboo bridge at 20m, DRP settlements at 30m, upland/hill at 80m and on the west side Upland/hill at 35m.

There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.



Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. It will not be affected by the construction works, as the activities will be carried out within the existing camp boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

(1) Within/near Elephant Migration Routes Yes/No*

There is no existence of Elephant corridor/ route now, which have been checked on the basis of elephant migration route map established by UNHCR/IUCN (latest updated maps as of 22 February 2018 and later June 05, 2018).

(2) potential impacts on remaining forests in/around camps Yes/No

N/A (This activity will be ensured in DRP community and within existing camp boundary)

(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:
Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation):

N/A (the sub-project will be constructed in a plain land and within an identified camp boundary)

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 700 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2019). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

**State of forestation:**

Patches of vegetation containing large and matured trees on all edges of the proposed subproject area are located within 200m radial distance.

Summary of water balance analysis (For water supply scheme only):

N/A

B.2: Pre construction Phase**Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable):**

A HBB road is passing on the east side of the sub-project. It is possible to carry the construction materials on this road to the construction site.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:

Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.

Possible location of labor camps:

Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.

Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes viii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and ix) clay are the most common type of building material used in construction.

Identification of access road for transportation (Yes/No):

A HBB road is passing on the east side of the sub-project. It is possible to carry the construction materials on this road to the construction site.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with CiC authority.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly

composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 200 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period.

Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

Around 3753 sq. feet land is required for the sub-project establishment.

There is reasonable vegetation around the sub-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No pre-existing drainage channel is found. Though a marshy land is found outside of the construction area, but will not be affected because of having a fair distance from the construction site and the adoption of proper construction site management practices.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

Low. The proposed multipurpose community and service center will be equipped with full facilities for conducting multipurpose services to targeted people, including separate toilets (sanitary) for male and female persons, water supply and filtration, storage and other facilities. No fecal sludge will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be

produced in a typical day and higher amount of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC authority should be made aware of this separation and disposal procedure.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

During the operation phase, this Multipurpose Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There is no protected area in or around the project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

The proposed site is located inside the camp area. A HBB road connects the sites with camp. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc. therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because



of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere.	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. - Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC. - Proper covering of dust producing materials	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	students, children, animals, etc.)		with polythene sheet, • Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. • Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is low	• Water spraying at the demolition site • Fencing / Installing barriers should be shield from dust and aggregates • Avoid usage of machines/equipment with extra noise; • Do not accumulate and burn waste at the site • Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders • It needs to Identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies • Make mandatory the use of safety gears	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			(helmets, safety belts, masks, gloves and boot) by workers depending on nature of work. Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.			
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	Under the sub-project intervention, the overall score is low.	- Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. - Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity; Waste disposal record.	Prior to the start of Construction works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times.			
	Accidents	Under the sub-project intervention, the overall score is low.	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. - Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc. should be available in the site during construction period.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score is low.	- Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage. - Involve the community in planning the work program so that any particularly noisy or	Contractor, environmental specialist of D&SC	Number of complaints from stakeholders, Use of silencers in	Daily



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			otherwise invasive activities can be scheduled to avoid sensitive times. • Avoid using of construction equipment producing excessive noise at school time & at night. • Ear protection devices for the workers & site staffs should be available in site during construction period.		noise producing equipment and sound barriers, Noise Level following decibel meter (dB)	
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by	Under the sub-project intervention, the overall score is low.	• Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. • Use tarpaulins to cover soils, sand and other loose material when transported by trucks. • Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free. • Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). • Limiting speed of construction vehicles in work sites to maximum of 20 km/h. • Regular monitoring of air quality.	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution control devices,	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	mitigation measures.				Maintain records	
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	- Prohibit employees from cutting of trees for firewood. - If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. - Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	- Prevent excessive noise; - Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); - No fires permitted on site except if needed for the construction works; - Staff must be trained up for operating equipment, - Availability and access to first-aid equipment and medical supplies. - Ensure the presence and use of safety gear at	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at project	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets, Uniforms etc., - Ensure adequate supply of drinking water. - Sanitation facilities for male & female workers separately.		location;	
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - All affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; - All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; - The contractor must arrange the cancellation of all temporary services;	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works
	Odor& waste disposal	Under the issue the overall score is low.	Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and	Complaints from communities	Site inspection daily /



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
				PMU		weekly basis.
	Vegetation	Under the issue the overall score is low.	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions;	Over the completion of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turfing, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required. Mention some recommendation on E&S assessment ESMP*

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.



Appendix-2

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Construction of 22 Multipurpose Service Center Steel Frame Building (LGED/EMCRP-W4): MPSC of Rohingya Camp-20, Block-M8

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of	Selected site will be far away from any water bodies or	PIU & Contractor	Environmental Consultant of PIU,



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	natural drainage	natural flow path to avoid the flash flood or any kind or surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.		PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	- Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. - It will be ensured that proper training and guidance are provided on general and occupational health and safety to Contractors' personnel and labors forces, and records of	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		training sessions are to be kept on site. All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. - Adequate facilities ensuring sanitation for labor camps will	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		be put in place. - Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labour forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared time to time for all types of work activities on site. - Proper walkways will be prepared for students and teachers in existing school boundary. - Proper Signpost at any slippery areas will be ensured in construction site.	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. - Adequate quantities of drinking water will be available at all		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Maintenance of assets, properties and	Periodic maintenance of building structures, plumbing, water filtering and electric equipment has to be carried out.	The party CiC find fit	UNO, Upazila Chairman of Upazila



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	equipment	- Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.		Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization works:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.



- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.
- Kitchen space disassembling must be treated with same level of accuracy and caution.
- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.



For wastes generated from construction and demobilization debris:

- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.
- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.
- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site.
- Burning of any type of wastes in the construction site shall be prohibited completely.

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Appendix-3

Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 20,000	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles	LS	LS @ Tk 30,000	30,000
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	2 nos.	@10,000 each	20,000
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as	2 no.	LS @ Tk. 30,000	60,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.			
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. The Safeguard personnel will take duty for 11 sites, so one-eleventh of the personnel cost is counted here.	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months (1/11 one site). (Net payment excluding Tax & VAT)	57,272.73
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73

**Cost of H&S Measures under COVID 19 Situations**

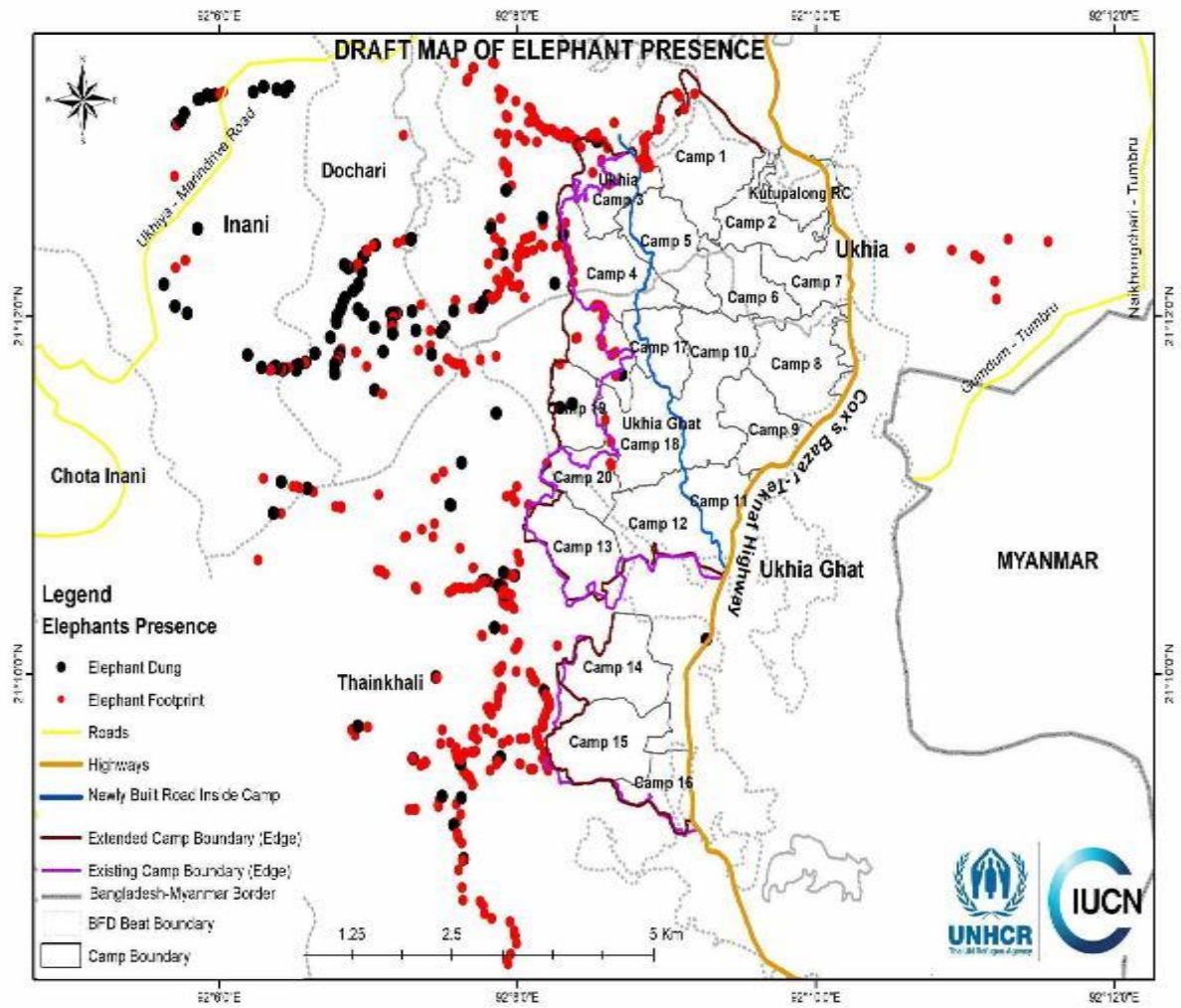
Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for	2 bottles and 1 Can for each	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office



Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
	Refill)	site						
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						165,125.00	

Appendix-4



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)
জরুরী ভিত্তিতে রোহিঙ্গা সংকট মোকাবেলায় মাল্টি সেক্টর প্রকল্প
Local Government Engineering Department (LGED)
Public Consultation Participants List
Focus Group Discussion

সময়: ১:১৫
উপ-প্রকল্প/কম্পোনেন্ট এর নাম: MPSC - Camp - 20, Block - M8
যত্ব নিমিত্ত স্থান: কৃত্তিক কামিউন হাউস মসজিদ
ইতিমধ্যে: এম.এ. খান তারিখ: ১২.০৩.২০২০
জাকবর: হুমায়ুন উপস্থিত: হুমায়ুন ফেলা: কাজাবাদ
সাব প্রকল্প নং: EMCRP/W-4

অংশগ্রহণকারীদের তালিকা (পরিচয় ও স্বাক্ষর)

ক্রম নং	নাম	বয়স	পুরুষ/নারী	গ্রাম	স্বাক্ষর / চিহ্ন
২	আব্দুল মান্নান	২৫	পুরুষ	Camp-20 Block-M8	<u>[Signature]</u>
৩	আব্দুল হকিম	৩৮	"	"	<u>[Signature]</u>
৪	ইমাম হোসেন	৩৭	"	"	<u>Emanhossein</u>
৫	হেদায়াত (হুদা) মন	৪০	"	"	<u>[Signature]</u>
৬	আব্দুল হকিম	৩৮	"	"	<u>Abruan</u>
৭	আঃ (হুদা) মন	৫৫	"	"	<u>Muftaaz</u>
৮	হুমায়ুন	৫০	"	"	<u>[Signature]</u>
৯	আব্দুল হকিম	৫৫	"	"	<u>Kamran</u>
১০	আব্দুল মান্নান	২৪	"	"	<u>Kaulin</u>
১১	আঃ (হুদা) মন	২৮	"	"	<u>[Signature]</u>
১২	নিমাইত হুদা	৪৪	"	"	<u>Nimait Huda</u>
১৩	আঃ হুমায়ুন (মালিক) ০১৪২২০৭৩৬২৪	৩৫	"	"	<u>আঃ হুমায়ুন</u>

Public consultation participant list



Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762

IDA Credit No. 5561-BD



ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-20,
Block-M31, Type-2
Union: Palongkhali; Upazila: Ukhiya
District: Cox's Bazar

Funded by:



Government of the People's Republic of Bangladesh & World Bank

Design and Supervision Consultancy:



Development Design Consultants Ltd.

March 2021

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department

MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank



1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Community and Service Centers are to offer the facilities which will improve the availability.

These Multipurpose Community and Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which are identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multipurpose Community and Service Center (MPSC) will be constructed under Palongkhali Union in Rohingya camp number 20, Block M31 of Ukhiya Upazila under Cox's Bazar district. The catchment area of the subproject comprises the surrounding area of Rohingya camp 20. Typical camp settlement settings of the area are no exception than other

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

camp locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya Camp-20, Block-M31
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
Owner of land	Government
Land Available (sq.ft.)	5000
Structural Design Option	Type-2 (Rectangular Steel Frame 2-storey building (90 feet x 41 feet 7 inches)
Catchment area	Camp-20
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	There is no direct route to connect the facility since it is inside camp location.
Land acquisition	Not required
Current land condition	The location is on an identified open space

[D&SC and Field survey, 2020]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-20; Block-M31		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3753
Number of Floors	2	3753X2
Number of Class room (sq. feet)	3	each@ 14'-11" X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.

1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-20, Block-M31 of Ukhiya Upazila in Cox's Bazar District. The site location is relatively a high plain land and the whole area is surrounded by hill as well as on the east side road is present near the site which connect with main road. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Community and Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
GPS position	21.191468 and 92.138443 E
Distance from Upazila HQ	15 km
Nearby major road	Camp connecting road named tom tom road (earthen)
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2020]

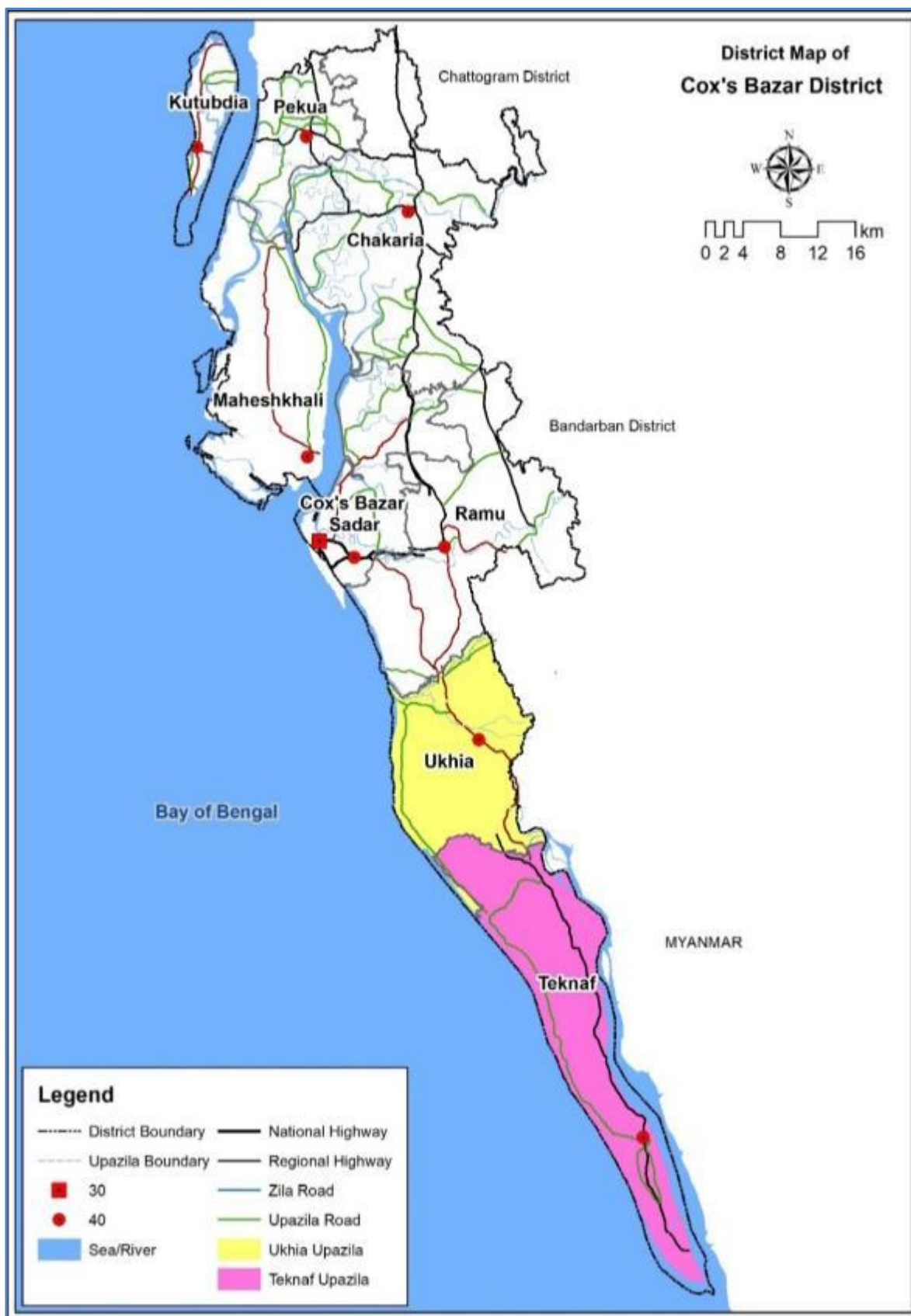


Figure 1.3.1: District Map with project location

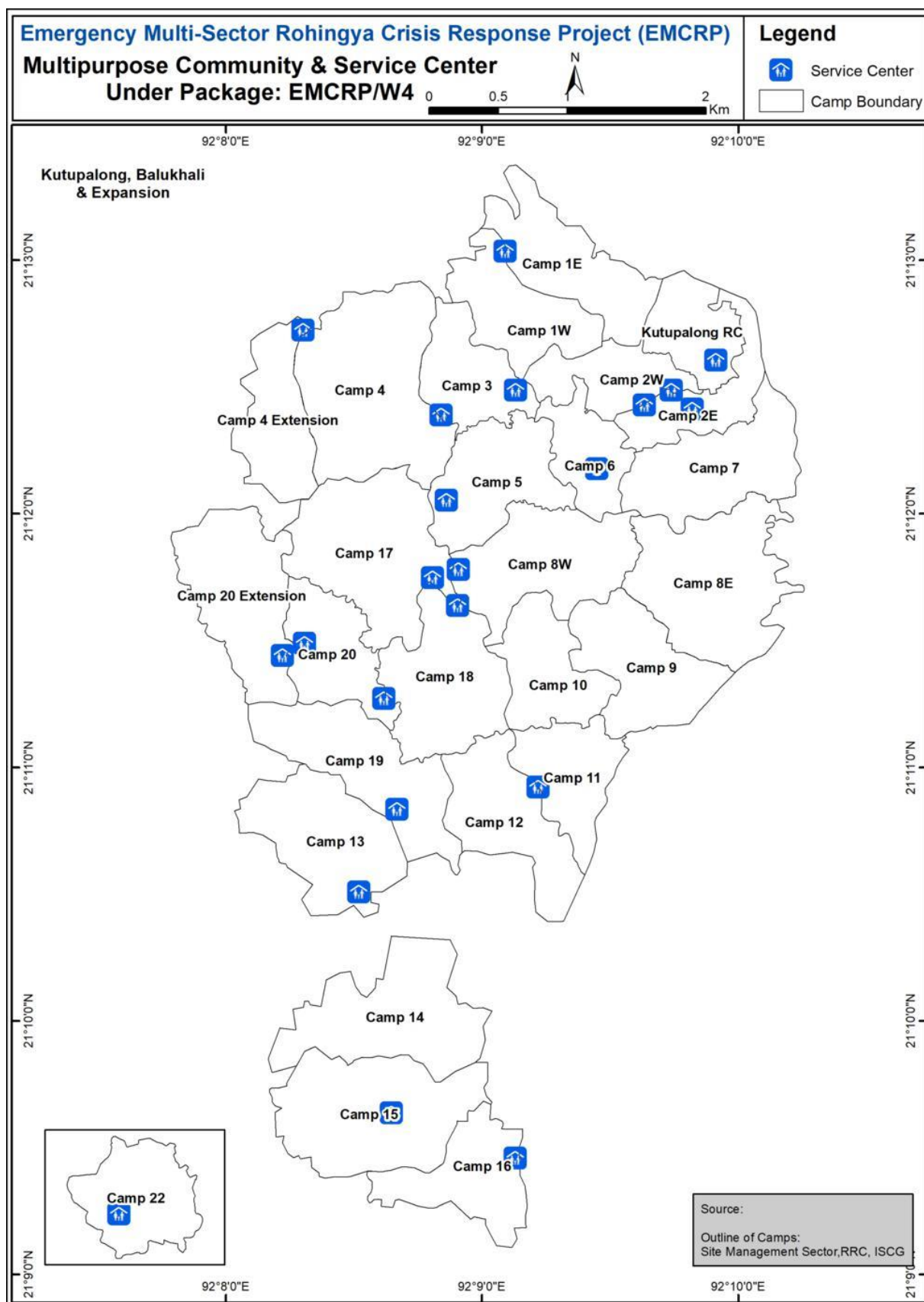


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)

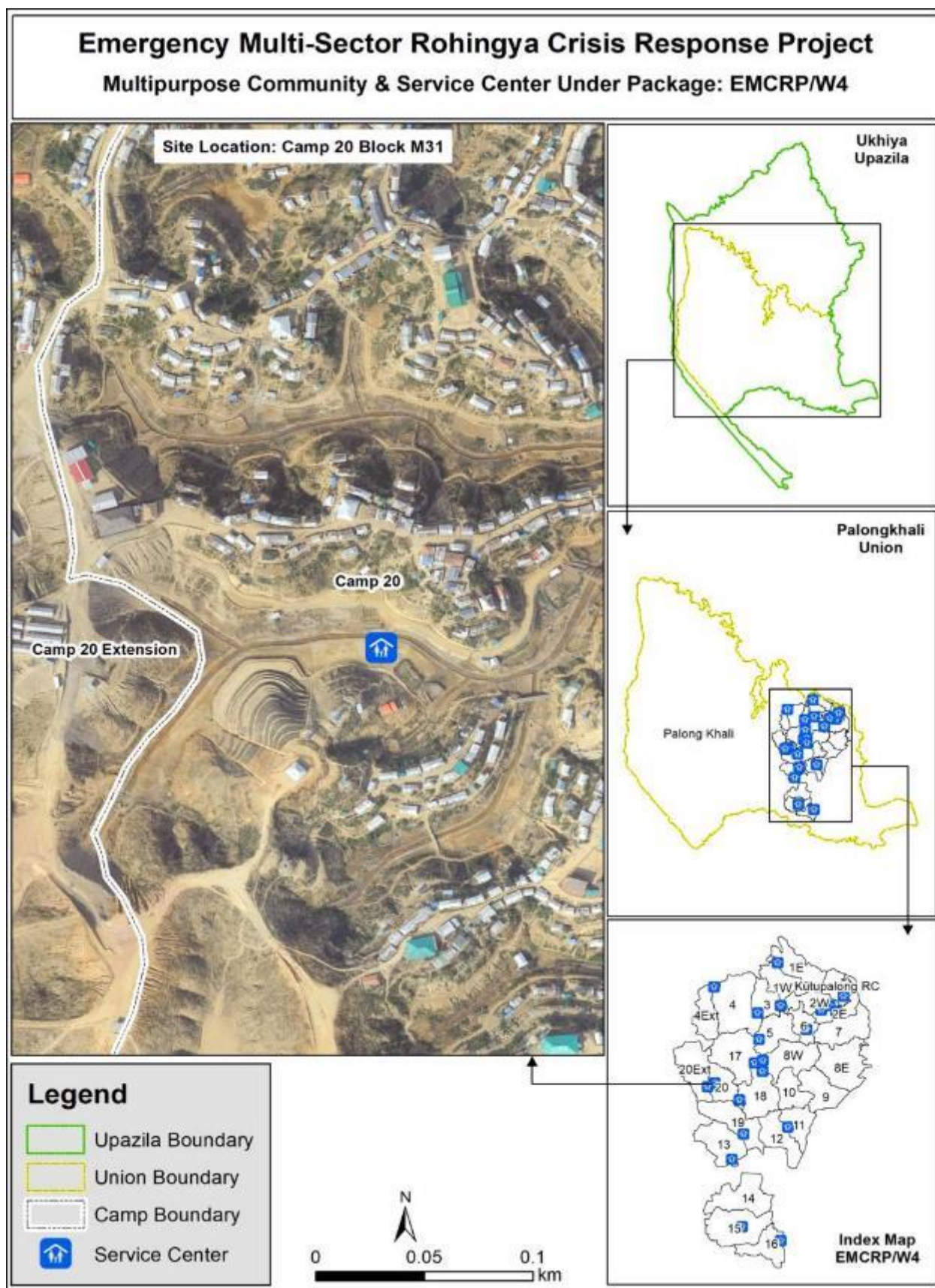


Figure 1.3.3: Union Map with Sub-project location in Camp area

1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	Shops (20m)
South side	Vegetation (50m)
East side	DPHE water network hub (30m), vegetation (40m)
West side	Steep slope (30m), DRP settlements (50m)

[Sources of data: D&SC Field survey, 2020]



Figure 1.4.1: Present condition of the Sub-project area



Figure 1.4.2: Proposed location of MPSC construction

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 12 March 2020 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 10 persons, and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location in particular has no major complications and is in relevance with the CiC office authority currently. Present Camp in Charge (CiC) has suggested to start the development works as early as possible.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Rohingya Camp 20; Block-M31 and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Consultation with CiC authority



Consultation with DRP

Figure 2.1.1: Public Consultation Meeting in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people considered that the selected site is suitable for the construction of Multipurpose service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.
- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.
- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.
- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine

which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 12 March 2020 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected sited allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. On the north of the sub project Rohingya community shops at 20m; On the south side of the sub-project area vegetation at 50m; on the East side DPHE water network hub at 30m, vegetation at 40m and on the west side steep slope or uplands at 30m and households of DRP community at 50m. Few disturbance to some of these establishments/features is anticipated due to construction activities for the case of not being in a sufficient distance from the construction site which is why safety measures such as, strict construction site management system- including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials et cetera should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from piling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from piling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routes and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the

mitigation options, different initiatives have been undertaken, such as formation and capacity development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones, as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree planation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones have been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tubewell in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose Community and Service Center will be constructed on a high land where some matured vegetation is found. Due to the construction activities of this Sub-project, trees (small and medium size) will not be cut down as well as 10 nos. of trees will be planted in the target location. Further, some shops or settlements on uplands of sub-project area might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall effects for this

proposed construction works are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.

- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.
- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures are being realized over time. A comprehensive monitoring framework is suggested in Project ESMF and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the

surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguards specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown

from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.
- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.

Appendix-1**Environmental Screening Form**

Sub-Project Description Form: (MPSC of Rohingya Camp-20, Block-M31)

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Ukhiya

Union: Palongkhali

Name of Community/Local Area: Palongkhali, Rohingya Camp-20.

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose community and Service Center Steel Frame 2-storey building will be constructed within target location.

Estimated footprint / land area for this sub-project is 5,000 sq. feet

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.): Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified location on Rohingya camp 20, Block-M31 area. This location is surrounded by hill. Selected location is mostly open space without trees or major structures. Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to

the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated construction of a new building on the selected place. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic. Human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified. On the north of the sub project Rohingya community shops at 20m; on the south side of the sub-project area vegetation at 50m; on the east side DPHE water network hub at 30m, vegetation at 40m and on the west side steep slope or uplands at 30m and households of DRP community at 50m are present on the surrounding target area.

Some degree of disturbance is anticipated due to construction activities to those components since they are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration routes were nearly 1 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 02. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

Sub-project Location:

The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district. The sub-project area is located at 21.191468 N and 92.138443 E. The distance from the Upazila headquarter is about 15 km. Nearby major road named tom tom road (Earthen).

Land ownership

Land is owned by Government.



Expected construction period: 18 (Eighteen months)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

Project intervention area is found to be an open space, but influence area should consider nearly half a kilometer radius around the proposed site.

On the north of the sub project Rohingya community shops at 20m; on the south side of the sub-project area vegetation at 50m; on the east side DPHE water network hub at 30m, vegetation at 40m and on the west side steep slope or uplands at 30m and households of DRP community at 50m but there is no chance to disturbance during this construction activity.

But there is no scope to be affected by the construction activities. No structures, trees and livelihood will be affected by this construction activity. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby.

Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

Section B: Environmental Screening

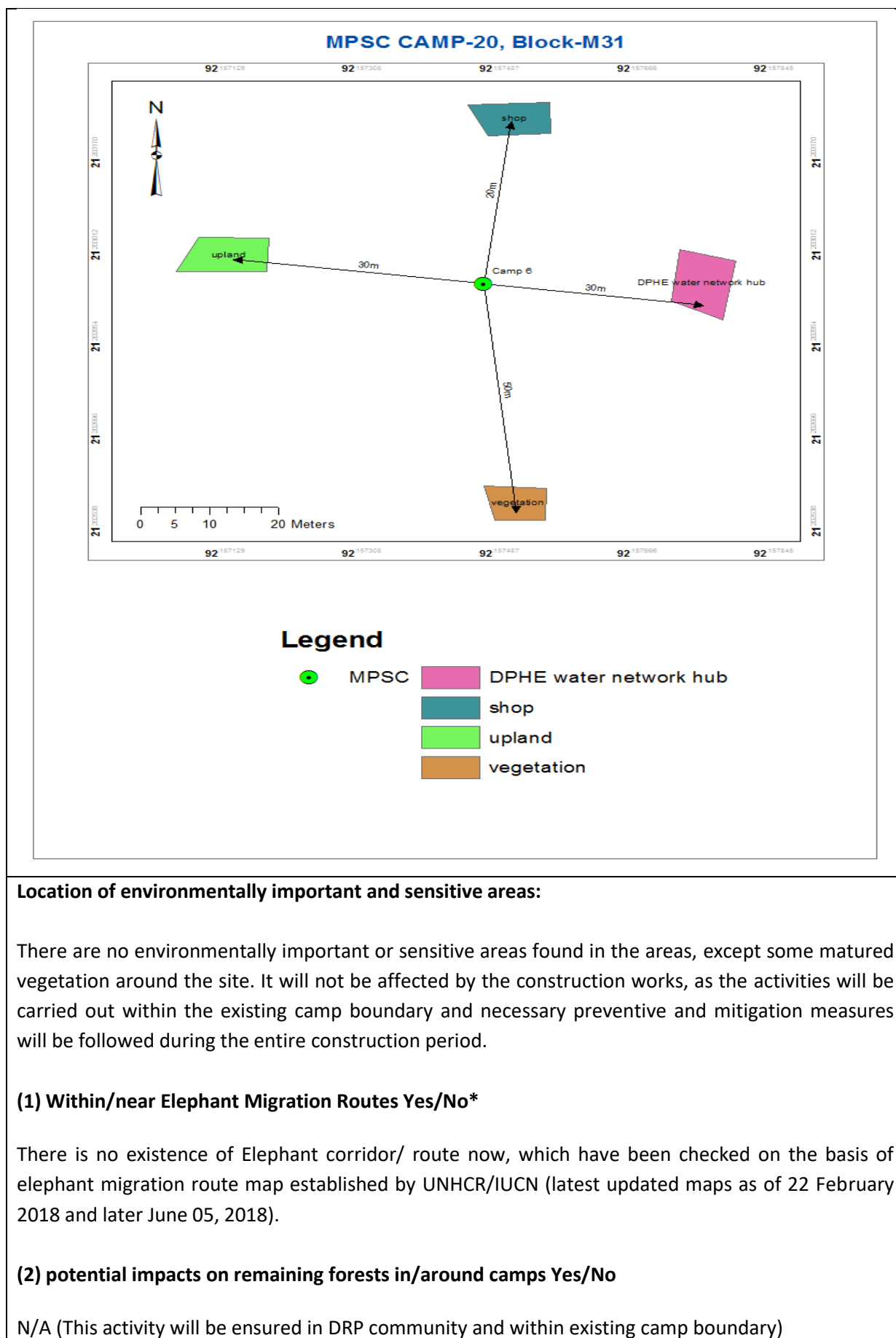
B.1: Environmental feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

On the north of the sub project Rohingya community shops at 20m; on the south side of the sub-project area vegetation at 50m; on the east side DPHE water network hub at 30m, vegetation at 40m and on the west side steep slope or uplands at 30m and households of DRP community at 50m.

There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.



(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:
Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation):

N/A (the sub-project will be constructed in a plain land and within an identified camp boundary)

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 700 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2019). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)

Status of wildlife movement:



N/A (None of the information was found about the wildlife movement in or across the area)

State of forestation:

Patches of vegetation containing large and matured trees on all edges of the proposed subproject area are located within 200m radial distance.

Summary of water balance analysis (For water supply scheme only):

N/A

B.2: Pre construction Phase

Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable):

An earthen road is passing on the east side of the sub-project. It is possible to carry the construction materials on this road to the construction site.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:

Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.

Possible location of labor camps:

Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.

Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes viii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and ix) clay are the most common type of building material used in construction.

Identification of access road for transportation (Yes/No):

An earthen road is passing on the east side of the sub-project. It is possible to carry the construction materials on this road to the construction site.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with CiC authority.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be

produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 200 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period.

Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

Around 3753 sq. feet land is required for the sub-project establishment.

There is reasonable vegetation around the sub-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No pre-existing drainage channel is found. Though a marshy land is found outside of the construction area, but will not be affected because of having a fair distance from the construction site and the adoption of proper construction site management practices.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

Low. The proposed multipurpose community and service center will be equipped with full facilities for conducting multipurpose services to targeted people, including separate toilets (sanitary) for male and female persons, water supply and filtration, storage and other facilities. No fecal sludge will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be

produced in a typical day and higher amount of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC authority should be made aware of this separation and disposal procedure.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

During the operation phase, this Multipurpose Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There is no protected area in or around the project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

The proposed site is located inside the camp area. An earthen road connects the sites with main road. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc. therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because



of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere.	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. - Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of students, children,	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC. - Proper covering of dust producing materials with polythene sheet	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	animals, etc.)		• Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. • Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is low	• Water spraying at the demolition site • Fencing / Installing barriers should be shield from dust and aggregates • Avoid usage of machines/equipment with extra noise; • Do not accumulate and burn waste at the site • Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders • It needs to Identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies • Make mandatory the use of safety gears (helmets, safety belts, masks, gloves and boot) by workers depending on nature of work.	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.			
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	Under the sub-project intervention, the overall score is low.	- Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. - Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity; Waste disposal record.	Prior to the start of Construction works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. Camp and working areas are to be kept clean and tidy at all times.			
	Accidents	Under the sub-project intervention, the overall score is low.	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. - Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc. should be available in the site during construction period.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score is low.	- Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage. - Involve the community in planning the work program so that any particularly noisy or otherwise invasive activities can be scheduled to avoid sensitive times. - Avoid using of construction equipment	Contractor, environmental specialist of D&SC	Number of complaints from stakeholders, Use of silencers in noise producing equipment	Daily



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			producing excessive noise at school time & at night. • Ear protection devices for the workers & site staffs should be available in site during construction period.		and sound barriers, Noise Level following decibel meter (dB)	
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.	Under the sub-project intervention, the overall score is low.	• Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. • Use tarpaulins to cover soils, sand and other loose material when transported by trucks. • Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free. • Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). • Limiting speed of construction vehicles in work sites to maximum of 20 km/h. • Regular monitoring of air quality.	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution control devices, Maintain records	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	- Prohibit employees from cutting of trees for firewood. - If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. - Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	- Prevent excessive noise; - Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); - No fires permitted on site except if needed for the construction works; - Staff must be trained up for operating equipment, - Availability and access to first-aid equipment and medical supplies. - Ensure the presence and use of safety gear at site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets, Uniforms etc., - Ensure adequate supply of drinking water.	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at project location;	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Sanitation facilities for male & female workers separately.			
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - All affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; - All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; - The contractor must arrange the cancellation of all temporary services;	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works
	Odor& waste disposal	Under the issue the overall score is low.	Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and PMU	Complaints from communities	Site inspection daily / weekly basis.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Vegetation	Under the issue the overall score is low.	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions;	Over the completion of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turfing, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required. Mention some recommendation on E&S assessment ESMP*

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.



Appendix-2

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Construction of 22 Multipurpose Service Center Steel Frame Building (LGED/EMCRP-W4): MPSC of Rohingya Camp-20, Block-M31

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	elephant conflict			
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	- Selected site will be far away from any water bodies or natural flow path to avoid the flash flood or any kind or surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.	PIU & Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose.	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- It will be ensured that proper training and guidance are provided on general and occupational health and safety to Contractors' personnel and labors forces, and records of training sessions are to be kept on site. - All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site.	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labour forces. • Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: • Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. • Working areas are kept clean and tidy at all times. • Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: • The potential for exposure to safety events such as tripping, working at height activities, fire	• All construction equipment will be properly inspected timely. • The risk assessment will be prepared time to time for all types of work activities on site. • Proper walkways will be prepared for students and teachers	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	in existing school boundary. - Proper Signpost at any slippery areas will be ensured in construction site. - Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. - Adequate quantities of drinking water will be available at all Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	fauna			
Operation & Maintenance	Maintenance of assets, properties and equipment	- Periodic maintenance of building structures, plumbing, water filtering and electric equipment has to be carried out. - Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization works:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.



- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.
- Kitchen space disassembling must be treated with same level of accuracy and caution.
- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.



For wastes generated from construction and demobilization debris:

- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.
- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.
- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site.
- Burning of any type of wastes in the construction site shall be prohibited completely.

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Appendix-3

Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 20,000	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles	LS	LS @ Tk 30,000	30,000
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	2 nos.	@10,000 each	20,000
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as	2 no.	LS @ Tk. 30,000	60,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.			
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. The Safeguard personnel will take duty for 11 sites, so one-eleventh of the personnel cost is counted here.	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months (1/11 one site). (Net payment excluding Tax & VAT)	57,272.73
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73

**Cost of H&S Measures under COVID 19 Situations**

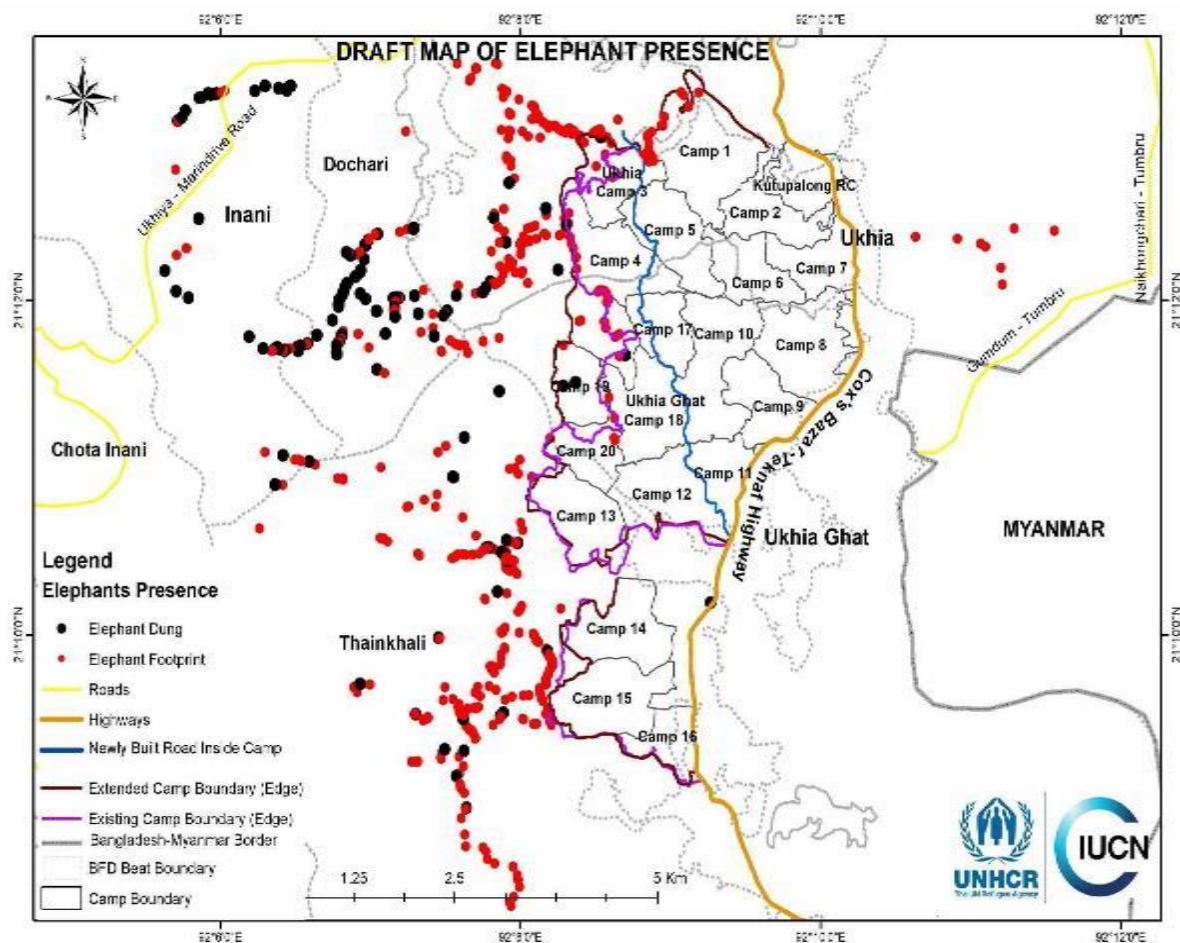
Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for	2 bottles and 1 Can for each	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office



Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
	Refill)	site						
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						165,125.00	

Appendix-4



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)
জরুরী ভিত্তিতে রোহিঙ্গা সংকট মোকাবেলায় স্থানীয় সেবায় প্রকল্প
Local Government Engineering Department (LGED)
Public Consultation Participants List
Focus Group Discussion

সময় : ১১:৪০ তারিখ : ১২.০৩.২০১৮

উপ-প্রকল্প/কম্পোনেন্ট এর নাম : MPSC - Camp - ২০, Block - M31

মত বিনিময় স্থান : Camp-২, Block-M31, sub project ^{EMCRP} ~~২০~~ ^{১৯} ~~২০~~

ইউনিয়ন : সানিগুয়াতী পরিষদ নং : ডাকঘর : বাগুয়াতী উপজেলা : ঈশ্বরদী জেলা : কক্সবাজার

সর্ব প্রকল্প নং : EMCRP/W-4

অংশগ্রহণকারীদের তালিকা (পরিচয় ও স্বাক্ষর)

ক্রম নং	নাম	বয়স	পুরুষ/নারী	গ্রাম	স্বাক্ষর / টিপসই
১	শ্রীঃ জাহিদুল হাকিম	২২	পুরুষ	Camp-২০	শ্রীঃ জাহিদুল হাকিম
২	শ্রীঃ ইমরান হোসেন	৩০	পুরুষ	"	শ্রীঃ ইমরান হোসেন
৩	শ্রীঃ ইমরান হোসেন	৩৫	পুরুষ	"	শ্রীঃ ইমরান হোসেন
৪	শ্রীঃ ইমরান হোসেন	৪০	পুরুষ	"	শ্রীঃ ইমরান হোসেন
৫	বাবু হাকিম	২২	পুরুষ	"	বাবু হাকিম
৬	আবু হাকিম	২৫	পুরুষ	"	আবু হাকিম
৭	আবু হাকিম	৩৫	পুরুষ	"	আবু হাকিম
৮	আবু হাকিম	৪৫	পুরুষ	"	আবু হাকিম
৯	আবু হাকিম	৫৫	পুরুষ	"	আবু হাকিম
১০	আবু হাকিম	৬৫	পুরুষ	"	আবু হাকিম

Public consultation participant list



Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762

IDA Credit No. 5561-BD



ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-Kutupalong RC,
Block-C, Type-03
Union: Palongkhali; Upazila: Ukhiya
District: Cox's Bazar

Funded by:



Government of the People's Republic of Bangladesh & World Bank

Design and Supervision Consultancy:



Development Design Consultants Ltd.

March 2021

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department

MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank



1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Service Centers are to offer the facilities which will improve the availability.

These Multipurpose Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which are identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multipurpose Community and Service Center (MPSC) will be constructed under Palongkhali union in Kutupalong R.C. camp of Ukhiya Upazila under Cox's Bazar district. The catchment area of the subproject comprises the surrounding area of Kutupalong R.C. camp. Typical camp settlement settings of the area are no exception than other camp locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya Camp-Kutupalong R.C., Block-C
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
Owner of land	Government
Land Available (sqft.)	4,264
Structural Design Option	Type-03 (Rectangular Steel Frame 2-storey building (80 feet x 41 feet 7 inches)
Catchment area	Camp-Kutupalong R.C.
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	There is a connecting road coming from Cox's Bazar-Teknaf highway which resides on the east of the proposed location.
Land acquisition	Not required
Current land condition	This location was used by SEF for clinical services also there is an old Ansar house made of tin. Proposed space can be used but needs demolition works. 13 big trees need cutting.

[D&SC and Field survey, 2021]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-Kutupalong R.C.; Block-C		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3326.64
Number of Floors	2	3326.64X2
Number of Class room (sq. feet)	3	each@ 11'-7"X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.



1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-kutupalong R.C., Block-C of Ukhiya Upazila in Cox's Bazar District. The site location is relatively a high plain land and accessible through vehicles as of 5ft wide HBB road is present near the site which connects with Cox's Bazar-Teknaf highway main road. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
GPS position	21.21010°N and 92.16509° E
Distance from Upazila HQ	5 km
Nearby major road	Cox's Bazar- Teknaf highway
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2021]

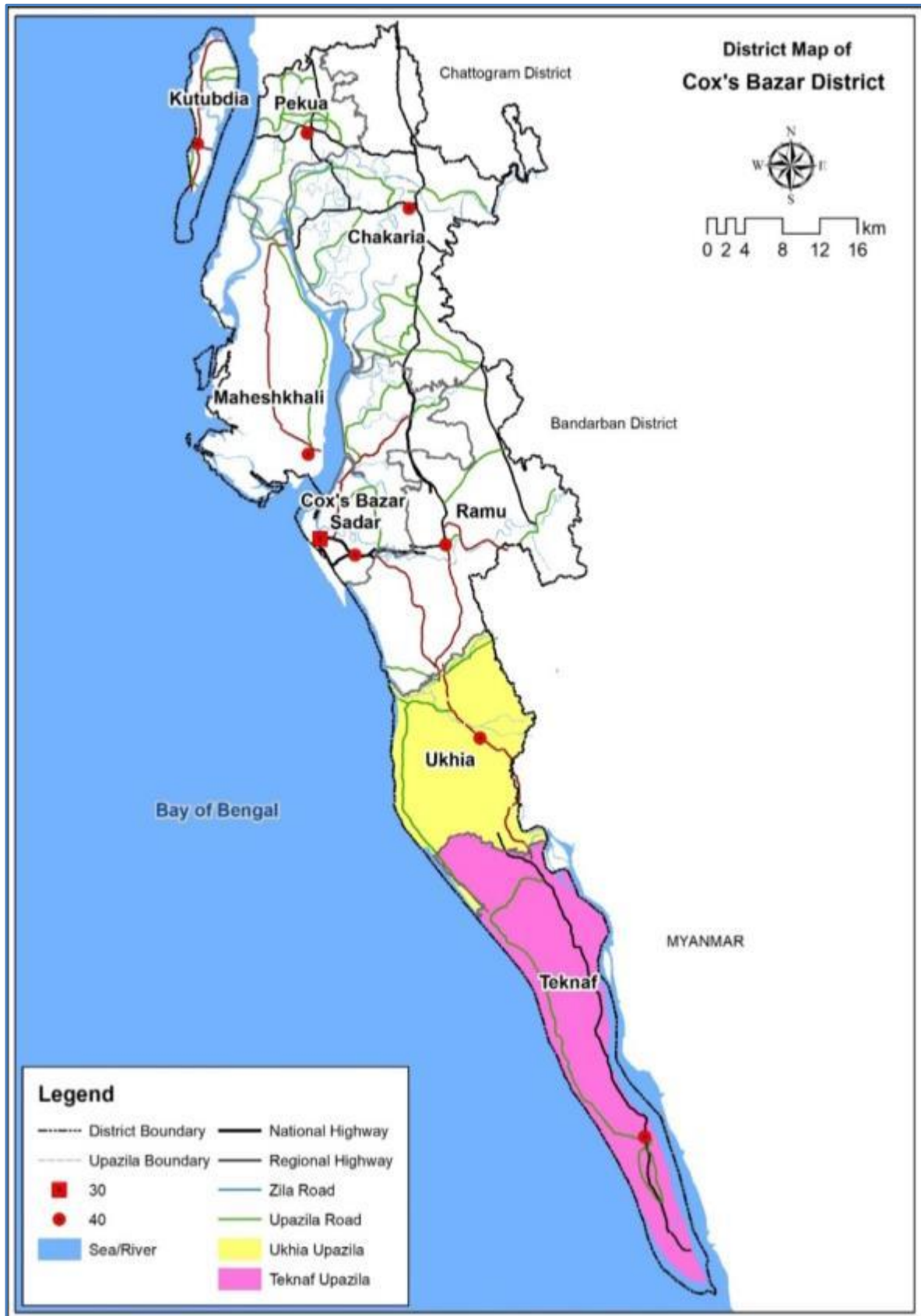


Figure 1.3.1: District Map with project location

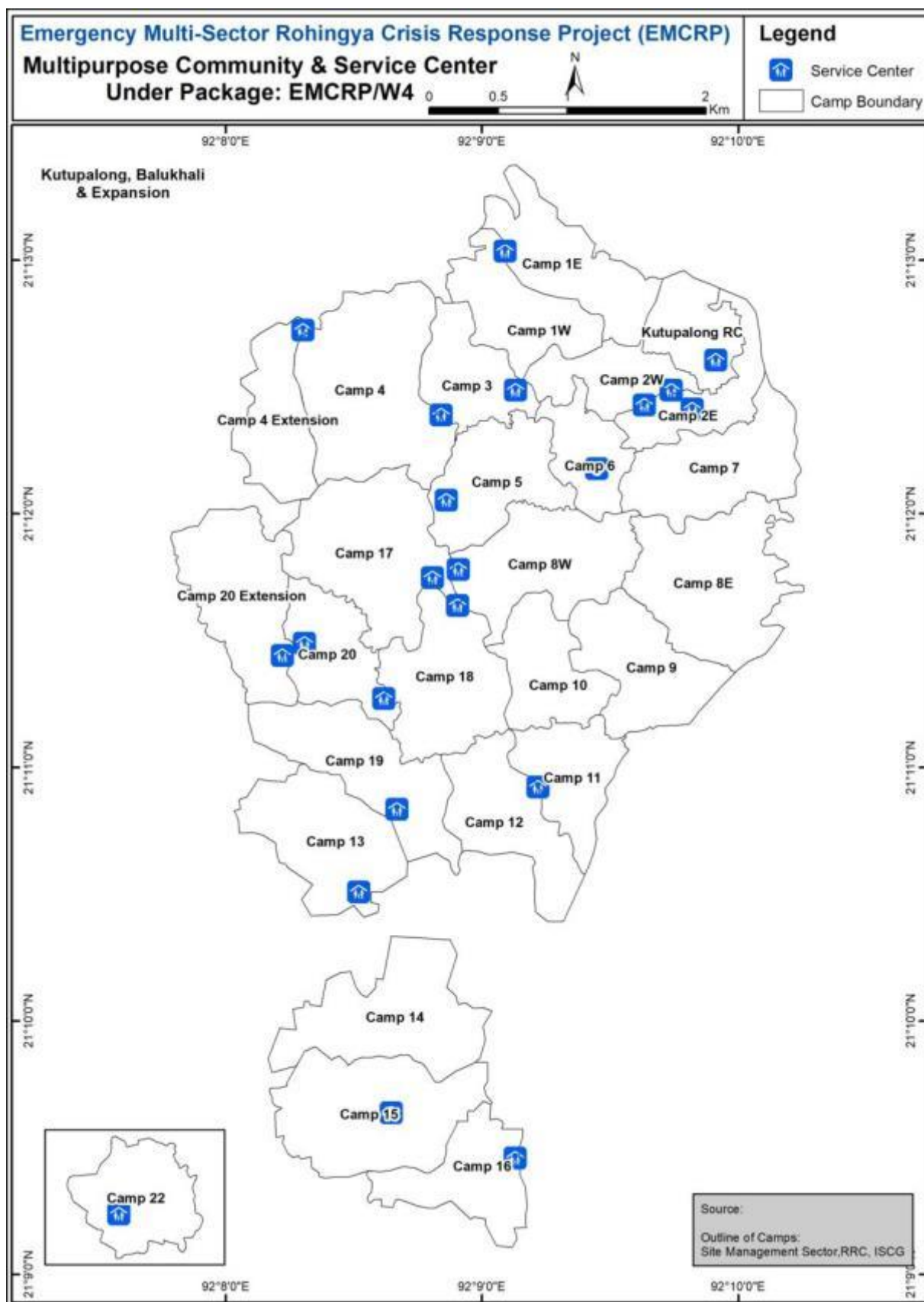


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)

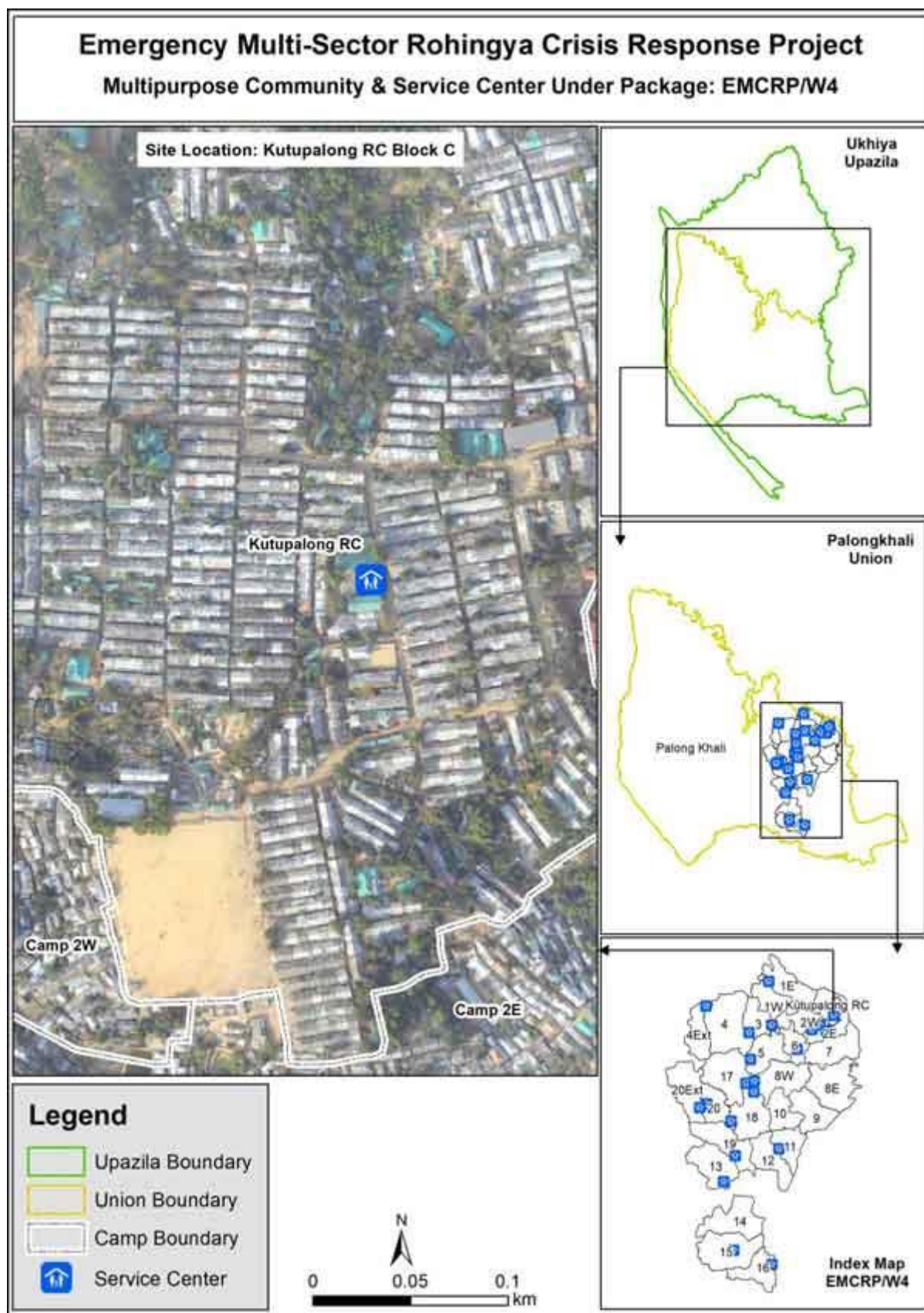


Figure 1.3.3: Union Map with Sub-project location in Camp area

1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	Haber Jalaler Hefzokhana(200m), Mosque(350m), Mosque(600m)
South side	Graveyard(200m), Mosque(200m), UNHCR 9 number School(50m), UNHCR 11 number school(250m),
East side	Mosque(950m), UNHCR 7 number School(150m), UNHCR 6 number school(200m), UNHCR 4 number school (NE 250m), UHNCR 3 number school (NE 320m)
West side	Mosque(100m), UNHCR 8 number school(250m), UNHCR 12 number school(400m), UNHCR school(600m)

[Sources of data: D&SC Field survey, 2021]



Figure 1.4.1: Present condition of the Sub-project area



Figure 1.4.2: Proposed location of MPSC construction

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 10 February 2021 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 07 persons, and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location is occupied with abandoned clinics operated by SEF as well as another Ansar house which is currently used by few DRP families. Present Camp in Charge has suggested to start the development works as early as possible.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Kutupalong R.C Camp; Block-C and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Consultation with CiC Office Authority



Consultation with DRP Community

Figure 2.1.1: Public Consultation Meeting in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people considered that the selected site is suitable for the construction of Multipurpose service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.
- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.
- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.

- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment. Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 10 February 2021 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected site allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. On the north side there are Haber Jalaler Hefzokhana(200m), Mosque(350m), Mosque(600m); on the south Graveyard(200m), Mosque(200m), UNHCR 9 number School(50m), UNHCR 11 number school(250m); on the east side Mosque(950m), UNHCR 7 number School(150m), UNHCR 6 number school(200m), UNHCR 4 number school (NE 250m), UHNCR 3 number school (NE 320m); on the west side there are Mosque(100m), UNHCR 8 number school(250m), UNHCR 12 number school(400m), UNHCR school(600m). Few disturbance to some of these establishments/features is anticipated due to construction activities for the case of not being in a

sufficient distance from the construction site which is why safety measures such as, strict construction site management system- including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials et cetera should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from pilling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from pilling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routs and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the mitigation options, different initiatives have been undertaken, such as formation and capacity development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones,

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree planation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones has been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tubewell in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose Community and Service Center will be constructed on a high land where some matured vegetation is found. Due to the construction activities of this Sub-project, 13 nos. of trees (big and medium size) will be cut down and as a mitigation measure, 39 nos. of trees should be replanted in the target location. Further, some DRP settlements around of sub-project area might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall effects for this proposed construction works are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.
- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.
- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures

are being realized over time. A comprehensive monitoring framework is suggested in Project ESMF and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguards specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.
- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.

Appendix-1**Environmental Screening Form**

Sub-Project Description Form: (MPSC of Rohingya camp-Kutupalong RC, Block-C)

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Ukhiya

Union: Palongkhali

Name of Community/Local Area: Palongkhali, Kutupalong R.C camp

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose community and Service Center Steel Frame 2-storey building will be constructed within target location.

Estimated footprint / land area for this sub-project is 3326.64 sq. feet

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.): Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified location on Rohingya camp area. On the north side there are Haber Jalaler Hefzokhana(200m), Mosque(350m), Mosque(600m); on the south Graveyard(200m), Mosque(200m), UNHCR 9 number School(50m), UNHCR 11 number school(250m); on the east side Mosque(950m), UNHCR 7 number School(150m), UNHCR 6 number school(200m), UNHCR 4 number school (NE 250m), UHNCR 3 number school (NE 320m); on the west side there are Mosque(100m), UNHCR 8 number school(250m), UNHCR 12 number school(400m), UNHCR school(600m). Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to demolition of an old building and later construction of a new building on the same place. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic and human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified. On the north side there are Haber Jalaler Hefzokhana(200m), Mosque(350m), Mosque(600m); on the south Graveyard(200m), Mosque(200m), UNHCR 9 number School(50m), UNHCR 11 number school(250m); on the east side Mosque(950m), UNHCR 7 number School(150m), UNHCR 6 number school(200m), UNHCR 4 number school (NE 250m), UHNCR 3 number school (NE 320m); on the west side there are Mosque(100m), UNHCR 8 number school(250m), UNHCR 12 number school(400m), UNHCR school(600m) are present on the surrounding target area.

Some degree of disturbance is anticipated due to construction activities to those components since they are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration route is present nearly 2 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 03. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

Sub-project Location:

The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district. The sub-project area is located at 21.21010° N and 92.16509° E. The distance from the Upazila headquarter is about 5 km. Nearby major road is Cox's Bazar- Teknaf highway.

Land ownership

Land is owned by Government.

Expected construction period: 18 (Eighteen months)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

Project intervention area is found to be partly open because there are few settlements present on the location as an old Ansar block and few abandoned clinic sheds, but influence area should consider nearly half a kilometer radius around the proposed site.

On the north side there are Haber Jalaler Hefzokhana(200m), Mosque(350m), Mosque(600m); on the south Graveyard(200m), Mosque(200m), UNHCR 9 number School(50m), UNHCR 11 number school(250m); on the east side Mosque(950m), UNHCR 7 number School(150m), UNHCR 6 number school(200m), UNHCR 4 number school (NE 250m), UHNCR 3 number school (NE 320m); on the west side there are Mosque(100m), UNHCR 8 number school(250m), UNHCR 12 number school(400m), UNHCR school(600m).

But there is no scope to be affected by the construction activities. No structures, trees and livelihood will be affected by this construction activity in the surrounding area but the immediate settlements abutting the targeted site may need resettlement or demolition. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby.

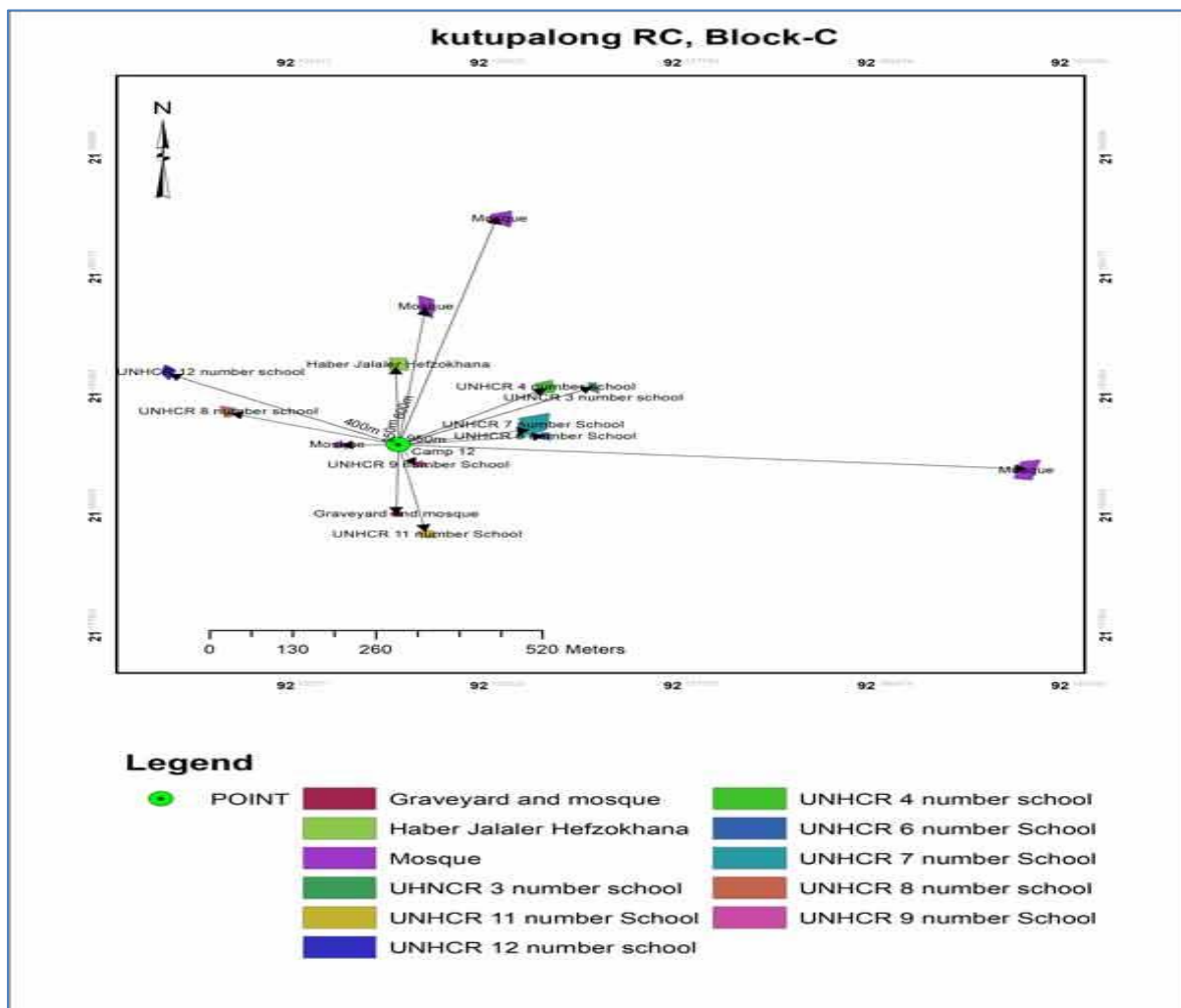
Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

Section B: Environmental Screening
B.1: Environmental feature of sub-project location
Description of cultural properties (if applicable, including distance from site):
Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

On the north side there are Haber Jalaler Hefzokhana(200m), Mosque(350m), Mosque(600m); on the south Graveyard(200m), Mosque(200m), UNHCR 9 number School(50m), UNHCR 11 number school(250m); on the east side Mosque(950m), UNHCR 7 number School(150m), UNHCR 6 number

school(200m), UNHCR 4 number school (NE 250m), UHNCR 3 number school (NE 320m); on the west side there are Mosque(100m), UNHCR 8 number school(250m), UNHCR 12 number school(400m), UNHCR school(600m).

There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.



Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. Several mosques, madrasa, high school and human settlement were found during the survey. Those will not be affected by the construction works, as the activities will be carried out within the existing selected boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

(1) Within/near Elephant Migration Routes Yes/No*

There is no existence of Elephant corridor/ route now, which have been checked on the basis of elephant migration route map established by UNHCR/IUCN (latest updated maps as of 22 February 2018 and later June 05, 2018).

(2) potential impacts on remaining forests in/around camps Yes/No

N/A (This activity will be ensured in DRP community and within existing camp boundary)

(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:
Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation):

N/A (the sub-project will be constructed in a plain land and within an identified camp boundary).

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 800 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2019). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to



681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)
Status of wildlife movement:
N/A (None of the information was found about the wildlife movement in or across the area)
State of forestation:
Patches of vegetation containing large and matured trees across the road side of the proposed subproject area are located within 200m radial distance.
Summary of water balance analysis (For water supply scheme only):
N/A

B.2: Pre construction Phase

Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable):
A HBB road is passing on the east side of the sub-project. It is possible to carry the construction materials on this road to the construction site.
Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:
Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.
Possible location of labor camps:
Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.
Requirement and type of raw materials (e.g. sand, stone, wood, etc.):
i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes vii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and viii) clay are the most common type of building material used in construction.
Identification of access road for transportation (Yes/No):
A HBB road is passing on the east side of the sub-project. It is possible to carry the construction materials on this road to the construction site.
Location identification for raw material storage:
Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with CiC authority.
Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from

old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase
Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 200 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period.

Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

Around 3326.64 sq. feet land is required for the sub-project establishment.

There is reasonable vegetation around the sup-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No pre-existing drainage channel is found. Though a marshy land is found outside of the construction area, but will not be affected because of having a fair distance from the construction



site and the adoption of proper construction site management practices.
Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description) Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.
Activities that can lead to landslides, slumps, slips and other mass movements in road cuts: The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description) N/A
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles: During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.
Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description) There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.
Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description) Low. The proposed multipurpose community and service center will be equipped with full facilities

for conducting multipurpose services to targeted people, including separate toilets (sanitary) for male and female persons, water supply and filtration, storage and other facilities. No fecal sludge will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be produced in a typical day and higher amount of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC authority should be made aware of this separation and disposal procedure.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

During the operation phase, this Multipurpose Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There is no protected area in or around the project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:



The proposed site is located inside the camp area. A HBB road connects the sites with main road. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc. therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere.	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. - Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC. - Proper covering of dust producing materials	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	students, children, animals, etc.)		with polythene sheet, • Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. • Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is Medium	• Water spraying at the demolition site • Fencing / Installing barriers should be shield from dust and aggregates • Avoid usage of machines/equipment with extra noise; • Do not accumulate and burn waste at the site • Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders • It needs to Identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies • Make mandatory the use of safety gears	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			(helmets, safety belts, masks, gloves and boot) by workers depending on nature of work. Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.			
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	Under the sub-project intervention, the overall score is low.	- Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. - Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity; Waste disposal record.	Prior to the start of Construction works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times.			
	Accidents	Under the sub-project intervention, the overall score is low.	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. - Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc. should be available in the site during construction period.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score is low.	- Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage. - Involve the community in planning the work program so that any particularly noisy or	Contractor, environmental specialist of D&SC	Number of complaints from stakeholders, Use of silencers in	Daily



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			otherwise invasive activities can be scheduled to avoid sensitive times. • Avoid using of construction equipment producing excessive noise at school time & at night. • Ear protection devices for the workers & site staffs should be available in site during construction period.		noise producing equipment and sound barriers, Noise Level following decibel meter (dB)	
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by	Under the sub-project intervention, the overall score is low.	• Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. • Use tarpaulins to cover soils, sand and other loose material when transported by trucks. • Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free. • Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). • Limiting speed of construction vehicles in work sites to maximum of 20 km/h. • Regular monitoring of air quality.	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution control devices,	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	mitigation measures.				Maintain records	
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	- Prohibit employees from cutting of trees for firewood. - If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. - Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	- Prevent excessive noise; - Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); - No fires permitted on site except if needed for the construction works; - Staff must be trained up for operating equipment, - Availability and access to first-aid equipment and medical supplies. - Ensure the presence and use of safety gear at site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets,	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at project location.	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Uniforms etc., - Ensure adequate supply of drinking water. - Sanitation facilities for male & female workers separately.			
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - All affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; - All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; - The contractor must arrange the cancellation of all temporary services.	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works
	Odor& waste disposal	Under the issue the overall score is low.	Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and PMU	Complaints from communities	Site inspection daily / weekly basis.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Vegetation	Under the issue the overall score is low.	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions.	Over the completion of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turfing, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required. Mention some recommendation on E&S assessment ESMP*

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.

**Appendix-2****Environmental and Social Management Plan (ESMP) of this Sub project (site specific)**

ESMP for Construction of 22nos. Multipurpose Community and Service Center Steel Frame Building (LGED/EMCRP-W4): MPSC of Rohingya Camp- Kutupalong R.C., Block-C

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	- Selected site will be far away from any water bodies or natural flow path to avoid the flash flood or any kind or surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.	PIU & Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	- Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. - It will be ensured that proper training and guidance are provided on general and occupational health and safety to	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Contractors' personnel and labors forces, and records of training sessions are to be kept on site. All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling.	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Adequate facilities ensuring sanitation for labor camps will be put in place. - Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labour forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation,	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared time to time for all types of work activities on site. - Proper walkways will be prepared for students and teachers in existing school boundary. - Proper Signpost at any slippery areas will be ensured in	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	mobile plant and vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	construction site. - Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration.		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Adequate quantities of drinking water will be available at all Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation &	Maintenance of assets,	Periodic maintenance of building structures, plumbing,	The party CiC	UNO, Upazila



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Maintenance	properties and equipment	water filtering and electric equipment has to be carried out. - Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.	find fit	Chairman of Upazila Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.



- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.
- Kitchen space disassembling must be treated with same level of accuracy and caution.
- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.

For wastes generated from construction and demobilization debris:

- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.



- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.
- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site;
- Burning of any type of wastes in the construction site shall be prohibited completely.

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**Appendix-3****Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC**

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 20,000	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles	LS	LS @ Tk 30,000	30,000
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	2 nos.	@10,000 each	20,000
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water	2 no.	LS @ Tk. 30,000	60,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.			
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. The Safeguard personnel will take duty for 11 sites, so one-eleventh of the personnel cost is counted here.	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months (1/11 one site). (Net payment excluding Tax & VAT)	57,272.73
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73

**Cost of H&S Measures under COVID 19 Situations**

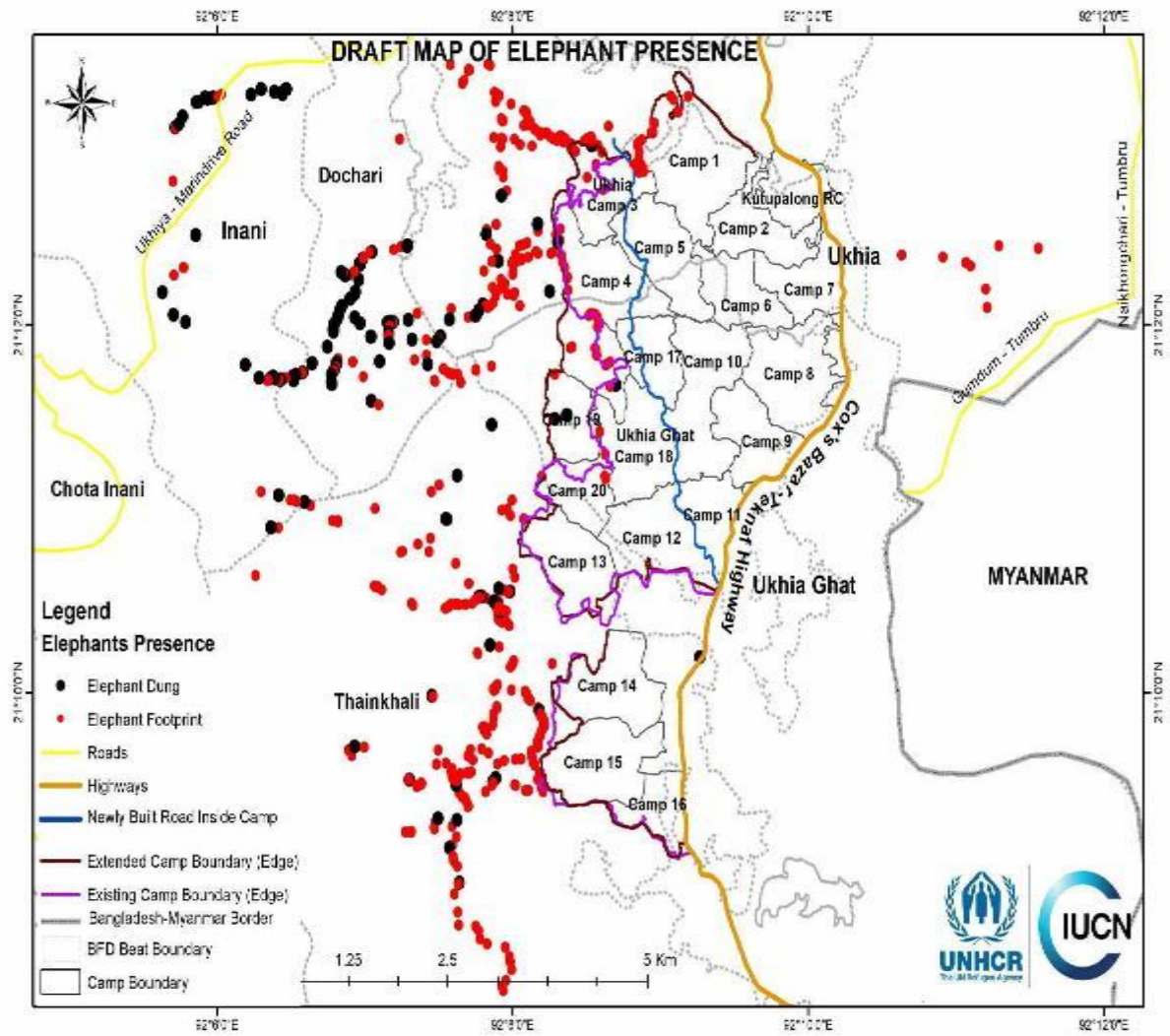
Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for	2 bottles and 1 Can for each	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office



Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
	Refill)	site						
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						165,125.00	

Appendix-4



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

[illegible]

Public consultation participant list



Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762

IDA Credit No. 5561-BD



ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-2E, Block-D,
Type-03

Union: Palongkhali; Upazila: Ukhiya
District: Cox's Bazar

Funded by:



Government of the People's Republic of Bangladesh & World Bank

Design and Supervision Consultancy:



Development Design Consultants Ltd.

March 2021

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department

MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank

1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Service Centers are to offer the facilities which will improve the availability.

These Multipurpose Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which are identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multipurpose Community and Service Center (MPSC) will be constructed under Palongkhali union in Rohingya camp number 2E of Ukhiya Upazila under Cox's Bazar district. The catchment area of the subproject comprises the surrounding area of Rohingya camp 2E. Typical camp settlement settings of the area are no exception than other camp locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya Camp-2E , Block-D
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
Owner of land	Government
Land Available (sqft.)	2400
Structural Design Option	Type-03 (Rectangular Steel Frame 2-storey building (80 feet x 41 feet 7 inches)
Catchment area	Camp-2E
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	There is no direct route to connect the facility since it is inside camp location.
Land acquisition	Not required
Current land condition	The location has a school of Mukti Cox's Bazar.

[D&SC and Field survey, 2020]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-2E; Block-D		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3326.64
Number of Floors	2	3326.64X2
Number of Class room (sq. feet)	3	each@ 11'-7"X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.

1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-2E, Block-D of Ukhiya Upazila in Cox's Bazar District. The site location is relatively a high plain land but not accessible through vehicles as of 4ft wide HBB

road is present near the site which does not connect with any main road. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
GPS position	21°12' 25.8"N and 92° 09' 48.6"E
Distance from Upazila HQ	6.5 km
Nearby major road	Cox's Bazar- Teknaf highway
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2020]

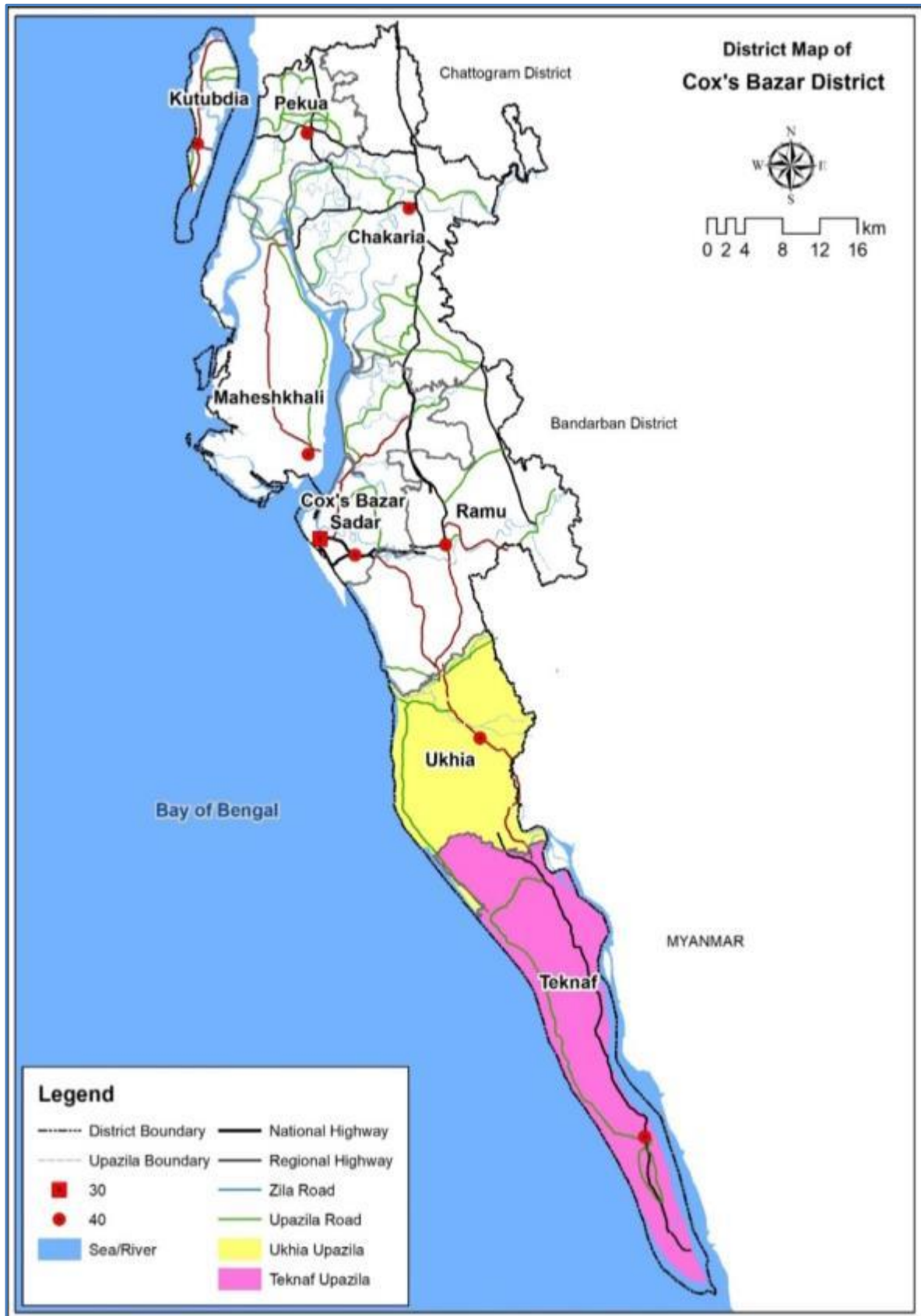


Figure 1.3.1: District Map with project location

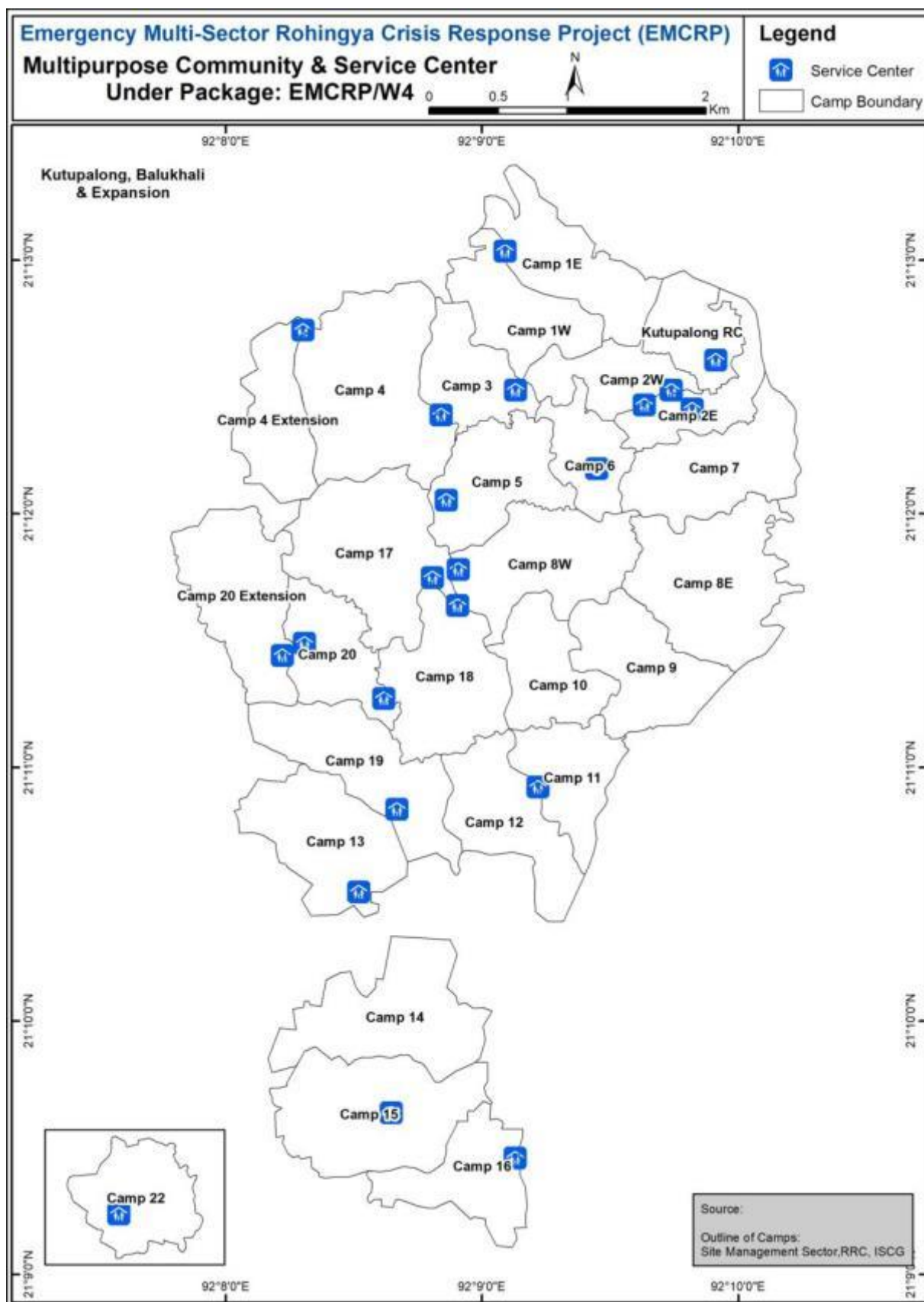


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)

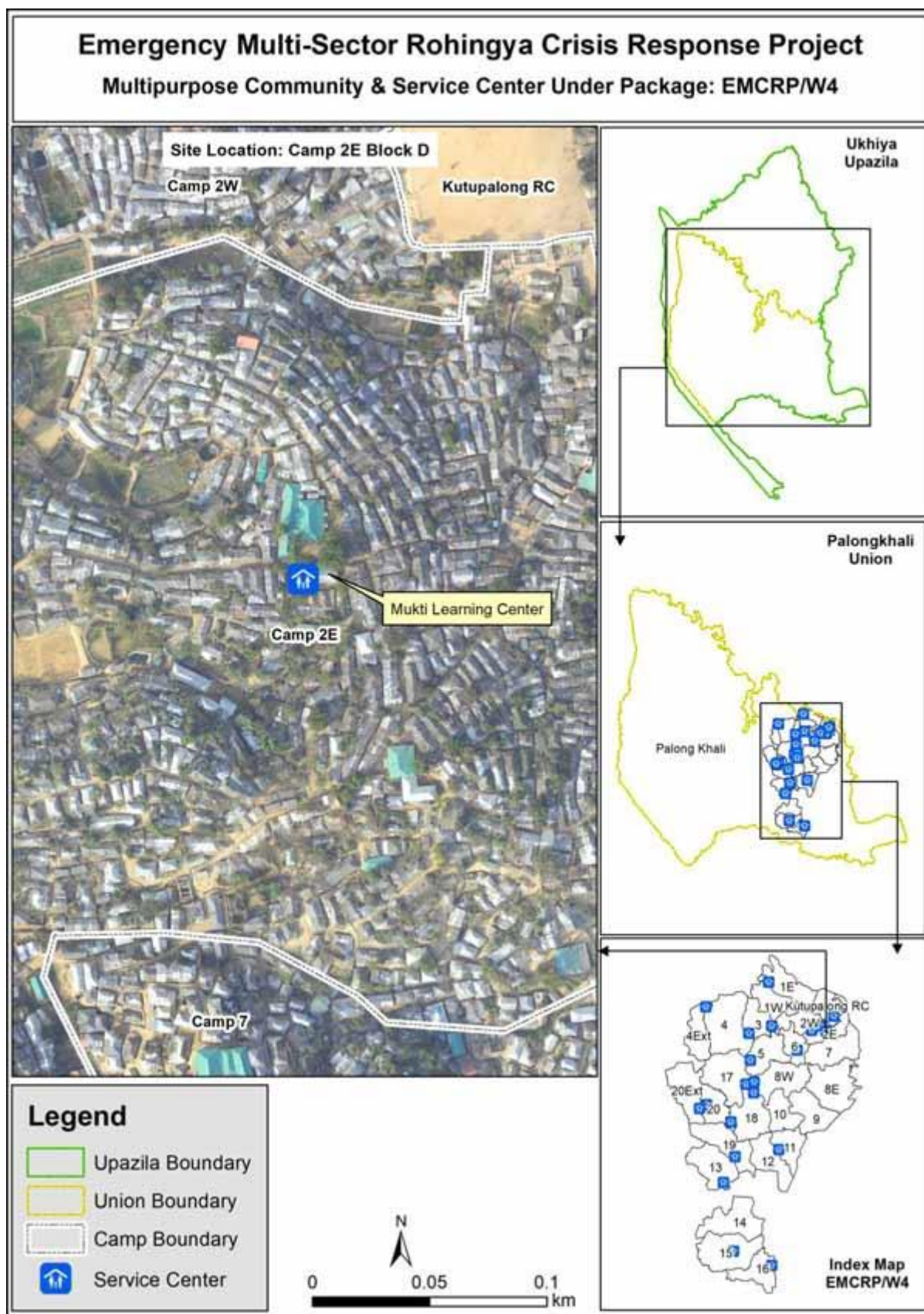


Figure 1.3.3: Union Map with Sub-project location in Camp area

1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	DRP Settlements (15m), HBB road(3m), CiC office (NW 100m),
South side	DRP Settlements(15m), Shop(5m), Pond (SW 120m)
East side	Mosque(20m), Water containers (20m), Open field(20m), Pond(300m), Madrassa(25m)
West side	Mosque (20m), Common Space(10m), Shop(8m),

[Sources of data: D&SC Field survey, 2020]



Figure 1.4.1: Present condition of the Sub-project area



Figure 1.4.2: Proposed location of MPSC construction

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 18 March 2020 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 10 persons, and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location in particular has a learning center which needs demolition in order to make space for the proposed component.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Rohingya Camp 2E; Block-D and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Consultation with CiC Office Authority



Consultation with DRP

Figure 2.1.1: Public Consultation Meeting in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-

project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people considered that the selected site is suitable for the construction of Multipurpose service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.
- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.
- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.
- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment. Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 18 March 2020 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected sited allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. On the north DRP Settlements (15m), HBB road(3m), CiC office (NW 100m); On the south DRP Settlements(15m), Shop(5m), Pond (SW 120m); On the east Mosque(20m), Water containers (20m), Open field(20m), Pond(300m), Madrassa(25m); on the west Mosque (20m), Common Space(10m), Shop(8m). Few disturbance to some of these establishments/features is anticipated due to construction activities for the case of not being in a sufficient distance from the construction site which is why safety measures such as, strict construction site management system-including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials et cetera should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from piling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from piling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routs and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the mitigation options, different initiatives have been undertaken, such as formation and capacity development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the

current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones, as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree planation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones have been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tubewell in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose Community and Service Center will be constructed on a high land where some matured vegetation is found. Due to the construction activities of this Sub-project, 3-5 nos. of trees (small and medium size) will be cut down and as a mitigation measure, 10 nos. of trees will be replanted in the target location. Further, some settlements around the sub-project area might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall effects for this proposed construction works are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.
- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.

- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures are being realized over time. A comprehensive monitoring framework is suggested in Project ESMP and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguards specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.
- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.



Appendix-1

Environmental Screening Form

Sub-Project Description Form: (MPSC of Rohingya camp-2E, Block-D(Mukti))

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Ukhiya

Union: Palongkhali

Name of Community/Local Area: Palongkhali, Rohingya Camp-2E

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose community and Service Center Steel Frame 2-storey building will be constructed within target location.

Estimated footprint / land area for this sub-project is 3326.64 sq. feet

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.): Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified location on Rohingya camp area. On the north DRP Settlements (15m), HBB road(3m), CiC office (NW 100m); On the south DRP Settlements(15m), Shop(5m), Pond (SW 120m); On the east Mosque(20m), Water containers (20m), Open field(20m), Pond(300m), Madrassa(25m); on the west Mosque (20m), Common Space(10m), Shop(8m). Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any



adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to demolition of an old building and later construction of a new building on the same place. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic and human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified. On the north DRP Settlements (15m), HBB road(3m), CiC office (NW 100m); On the south DRP Settlements(15m), Shop(5m), Pond (SW 120m); On the east Mosque(20m), Water containers (20m), Open field(20m), Pond(300m), Madrassa(25m); on the west Mosque (20m), Common Space(10m), Shop(8m) are present on the surrounding target area.

Some degree of disturbance is anticipated due to construction activities to those components since they are located in very close proximity. In this sub-project area, elephant migration routes exist (ref. IUCN). Elephant migration route is present nearly 2 km away from this site. Currently there are no movements.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 03. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

Sub-project Location:

The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district. The sub-project area is located at 21°12' 25.8" N and 92° 09' 48.6" E. The distance from the Upazila

headquarter is about 6.5 km. Nearby major road is Cox's Bazar- Teknaf highway.

Land ownership

Land is owned by Government.

Expected construction period: 18 (Eighteen months)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

Project intervention area is found to have a learning center operated by Mukti Cox's Bazar which will need demolition in case of implementation of the component. Moreover, influence area should consider nearly half a kilometer radius around the proposed site. There are mosques located on the east and west side.

On the north DRP Settlements (15m), HBB road(3m), CiC office (NW 100m); On the south DRP Settlements(15m), Shop(5m), Pond (SW 120m); On the east Mosque(20m), Water containers (20m), Open field(20m), Pond(300m), Madrassa(25m); on the west Mosque (20m), Common Space(10m), Shop(8m) but there is no chance to disturbance during this construction activity.

But there is no scope to be affected by the construction activities. Other than the learning center at the midpoint of the selected site no other structures, trees and livelihood will be affected by this construction activity. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby.

Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

Section B: Environmental Screening

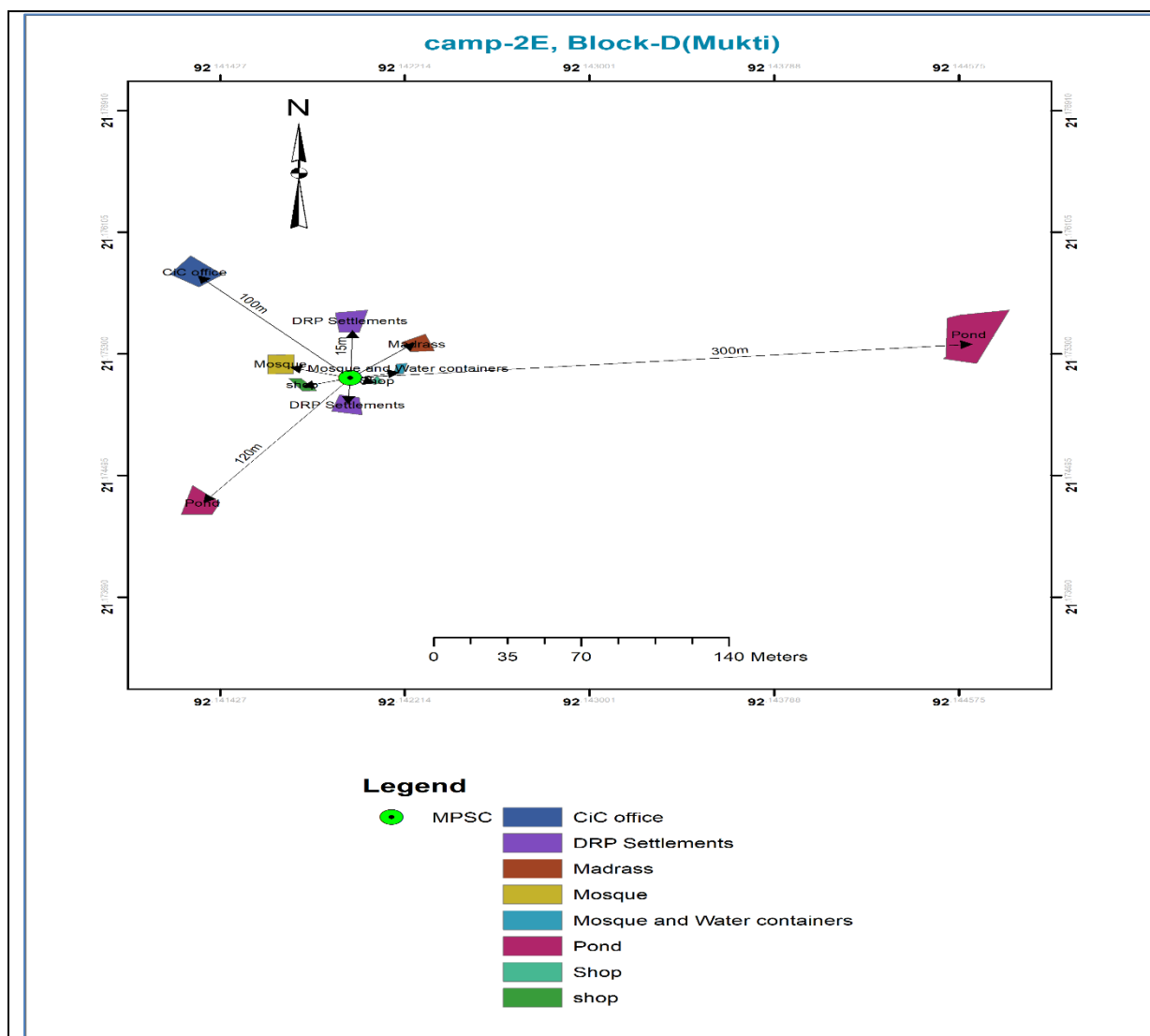
B.1: Environmental feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

On the north DRP Settlements (15m), HBB road(3m), CiC office (NW 100m); On the south DRP Settlements(15m), Shop(5m), Pond (SW 120m); On the east Mosque(20m), Water containers (20m), Open field(20m), Pond(300m), Madrassa(25m); on the west Mosque (20m), Common Space(10m), Shop(8m).

There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.



Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. Several mosques, madrasa, learning center and DRP settlement were found during the survey. Those will not be affected by the construction works, as the activities will be carried out within the existing selected boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

(1) Within/near Elephant Migration Routes Yes/No*

There is no existence of Elephant corridor/ route now, which have been checked on the basis of elephant migration route map established by UNHCR/IUCN (latest updated maps as of 22 February 2018 and later June 05, 2018).

(2) potential impacts on remaining forests in/around camps Yes/No

N/A (This activity will be ensured in DRP community and within existing camp boundary)

(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:
Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation):

N/A (the sub-project will be constructed in a plain land and within an identified camp boundary)

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 800 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2019). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

**State of forestation:**

Patches of vegetation containing large and matured trees across the road side of the proposed subproject area are located within 200m radial distance.

Summary of water balance analysis (For water supply scheme only):

N/A

B.2: Pre construction Phase**Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable):**

A HBB road is passing on the west and north side of the proposed location which is another component of EMCRP project under work package 13(6). It is not possible to carry construction materials using this road to the construction site because the road is only 4 feet wide.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:

Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.

Possible location of labor camps:

Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.

Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes vii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and viii) clay are the most common type of building material used in construction.

Identification of access road for transportation (Yes/No):

A HBB road is passing on the west and north side of the proposed location which is another component of EMCRP project under work package 13(6). It is not possible to carry construction materials using this road to the construction site because the road is only 4 feet wide.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with CiC authority.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 200 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period.

Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

Around 3326.64 sq. feet land is required for the sub-project establishment.

There is reasonable vegetation around the sup-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No pre-existing drainage channel is found. Though a marshy land is found outside of the construction area, but will not be affected because of having a fair distance from the construction site and the adoption of proper construction site management practices.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase
Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

Low. The proposed multipurpose community and service center will be equipped with full facilities for conducting multipurpose services to targeted people, including separate toilets (sanitary) for

male and female persons, water supply and filtration, storage and other facilities. No fecal sludge will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be produced in a typical day and higher amount of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC authority should be made aware of this separation and disposal procedure.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

During the operation phase, this Multipurpose Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There is no protected area in or around the project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

The proposed site is located inside the camp area. A HBB road connects passes next to the selected



site but not connects with any major road. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc. therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere.	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. - Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC. - Proper covering of dust producing materials	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	students, children, animals, etc.)		with polythene sheet, • Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. • Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is High	• Water spraying at the demolition site • Fencing / Installing barriers should be shield from dust and aggregates • Avoid usage of machines/equipment with extra noise; • Do not accumulate and burn waste at the site • Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders • It needs to Identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies • Make mandatory the use of safety gears	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			(helmets, safety belts, masks, gloves and boot) by workers depending on nature of work. Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.			
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	Under the sub-project intervention, the overall score is low.	- Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. - Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity; Waste disposal record.	Prior to the start of Construction works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times.			
	Accidents	Under the sub-project intervention, the overall score is low.	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. - Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc. should be available in the site during construction period.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score is low.	- Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage. - Involve the community in planning the work program so that any particularly noisy or	Contractor, environmental specialist of D&SC	Number of complaints from stakeholders, Use of silencers in	Daily



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			otherwise invasive activities can be scheduled to avoid sensitive times. • Avoid using of construction equipment producing excessive noise at school time & at night. • Ear protection devices for the workers & site staffs should be available in site during construction period.		noise producing equipment and sound barriers, Noise Level following decibel meter (dB)	
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by	Under the sub-project intervention, the overall score is low.	• Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. • Use tarpaulins to cover soils, sand and other loose material when transported by trucks. • Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free. • Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). • Limiting speed of construction vehicles in work sites to maximum of 20 km/h. • Regular monitoring of air quality.	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution control devices,	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	mitigation measures.				Maintain records	
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	- Prohibit employees from cutting of trees for firewood. - If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. - Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	- Prevent excessive noise; - Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); - No fires permitted on site except if needed for the construction works; - Staff must be trained up for operating equipment, - Availability and access to first-aid equipment and medical supplies. - Ensure the presence and use of safety gear at site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets,	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at project location;	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Uniforms etc., - Ensure adequate supply of drinking water. - Sanitation facilities for male & female workers separately.			
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - All affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; - All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; - The contractor must arrange the cancellation of all temporary services;	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works
	Odor& waste disposal	Under the issue the overall score is low.	Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and PMU	Complaints from communities	Site inspection daily / weekly basis.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Vegetation	Under the issue the overall score is low.	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions;	Over the completion of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turfing, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required. Mention some recommendation on E&S assessment ESMP*

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.

**Appendix-2****Environmental and Social Management Plan (ESMP) of this Sub project (site specific)**

ESMP for Construction of 22nos. Multipurpose Community and Service Center Steel Frame Building (LGED/EMCRP-W4): MPSC of Rohingya Camp-2E, Block-D (Mukti)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	- Selected site will be far away from any water bodies or natural flow path to avoid the flash flood or any kind or surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.	PIU & Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	- Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. - It will be ensured that proper training and guidance are provided on general and occupational health and safety to	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Contractors' personnel and labors forces, and records of training sessions are to be kept on site. All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling.	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Adequate facilities ensuring sanitation for labor camps will be put in place. - Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labour forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation,	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared time to time for all types of work activities on site. - Proper walkways will be prepared for students and teachers in existing school boundary. - Proper Signpost at any slippery areas will be ensured in	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	mobile plant and vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	construction site. - Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration.		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Adequate quantities of drinking water will be available at all Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation &	Maintenance of assets,	Periodic maintenance of building structures, plumbing,	The party CiC	UNO, Upazila



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Maintenance	properties and equipment	water filtering and electric equipment has to be carried out. - Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.	find fit	Chairman of Upazila Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.



- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.
- Kitchen space disassembling must be treated with same level of accuracy and caution.
- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.

For wastes generated from construction and demobilization debris:

- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.



- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.
- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site;
- Burning of any type of wastes in the construction site shall be prohibited completely.

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Appendix-3

Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 20,000	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles	LS	LS @ Tk 30,000	30,000
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	2 nos.	@10,000 each	20,000
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as	2 no.	LS @ Tk. 30,000	60,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.			
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. The Safeguard personnel will take duty for 11 sites, so one-eleventh of the personnel cost is counted here.	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months (1/11 one site). (Net payment excluding Tax & VAT)	57,272.73
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73

**Cost of H&S Measures under COVID 19 Situations**

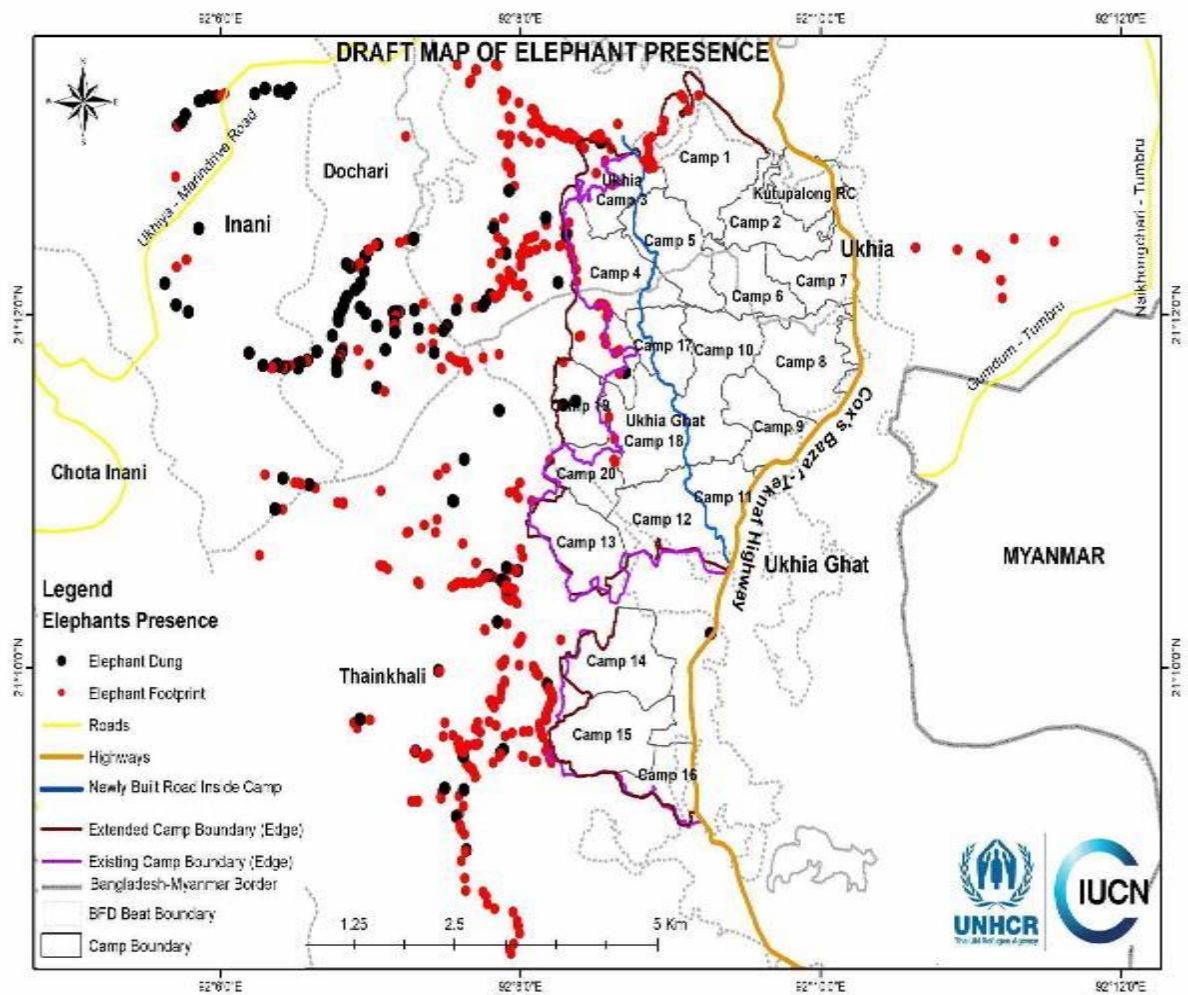
Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No.	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for	2 bottles and 1 Can for each	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office



Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
	Refill)	site						
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						165,125.00	

Appendix-4



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

(2)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)
 জাতি-ভিত্তিক জাতিসংঘ সেক্টর মোকাবেলায় দ্রুত প্রতিক্রিয়া
 Local Government Engineering Department (LGED)
 Public Consultation Participants List
Focus Group Discussion

তারিখ: ২২.০৬.২০২০
 উপ-প্রকল্প/কম্পোনেন্ট এর নাম: MYSC - Camp- 2E, Block-D (Mukti)
 যা নিয়ে আলোচনা হবে: Camp- 2E, Block-D, Sub project এর ওয়ার্ড।
 ইতিমধ্যে: ~~জাতিসংঘ~~ ~~জাতিসংঘ~~ তারিখ: ~~২২.০৬.২০২০~~ ~~২২.০৬.২০২০~~ ~~২২.০৬.২০২০~~
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আমন্ত্রণকারী/সংগঠক (নাম ও পদবী)

ক্রম নং	নাম	বয়স	পুরুষ/মহিলা	এলাকা	স্বাক্ষর/সিগনেচার
১	আব্দুল হামিদ	৫০	পুরুষ	Camp- 2E	আব্দুল হামিদ
২	আব্দুল হামিদ	২৫	পুরুষ	"	আব্দুল হামিদ
৩	আব্দুল হামিদ	২৬	পুরুষ	"	আব্দুল হামিদ
৪	আব্দুল হামিদ	২০	পুরুষ	"	আব্দুল হামিদ
৫	আব্দুল হামিদ	৬২	পুরুষ	"	আব্দুল হামিদ
৬	আব্দুল হামিদ	৬৬	পুরুষ	"	আব্দুল হামিদ
৭	আব্দুল হামিদ	৪২	পুরুষ	"	আব্দুল হামিদ
৮	আব্দুল হামিদ	২৭	পুরুষ	"	আব্দুল হামিদ
৯	আব্দুল হামিদ	৩০	পুরুষ	"	আব্দুল হামিদ
১০	আব্দুল হামিদ	৬০	পুরুষ	"	আব্দুল হামিদ

Public consultation participant list

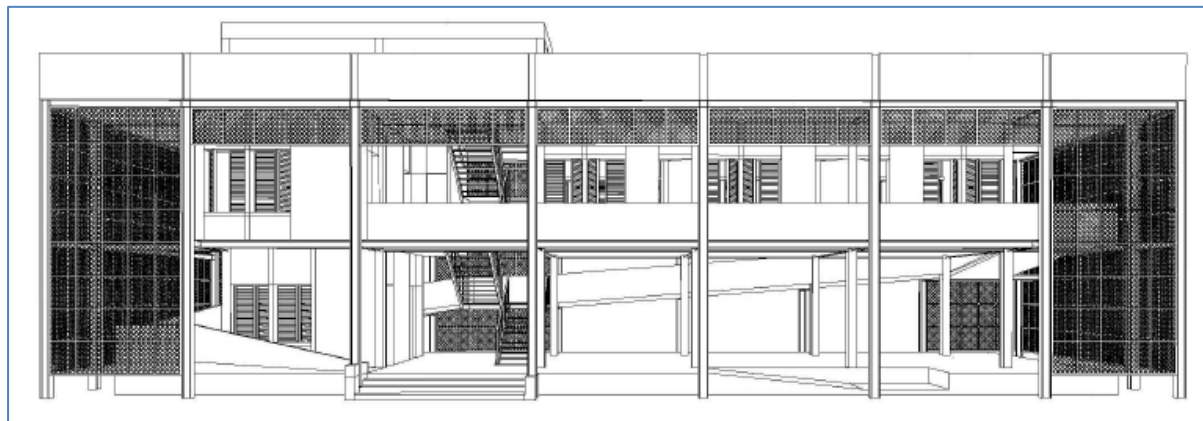


Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762

IDA Credit No. 5561-BD



ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-2W, Block-B,
Type-02

Union: Palongkhali; Upazila: Ukhiya
District: Cox's Bazar

Funded by:



Government of the People's Republic of Bangladesh & World Bank

Design and Supervision Consultancy:



Development Design Consultants Ltd.

March 2021

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department

MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank



1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Service Centers are to offer the facilities which will improve the availability.

These Multipurpose Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which are identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multipurpose Community and Service Center (MPSC) will be constructed under Palongkhali union in Rohingya camp number 2W of Ukhiya Upazila under Cox's Bazar district. The catchment area of the subproject comprises the surrounding area of Rohingya camp 2W. Typical camp settlement settings of the area are no exception than other camp

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya Camp-2W , Block-B
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
Owner of land	Government
Land Available (sqft.)	5000
Structural Design Option	Type-02 (Rectangular Steel Frame 2-story building (90 feet x 42 feet 5 inches)
Catchment area	Camp-2W
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	There is a HBB road which is known as ADB road on the south and east side of the location connecting camp-06 and camp 2E.
Land acquisition	Not required
Current land condition	The location is found to have a vegetable growing field

[D&SC and Field survey, 2021]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-2W; Block-B		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3742.47
Number of Floors	2	3742.47X2
Number of Class room (sq. feet)	3	each@ 14'-11" X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.



1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-2W, Block-B of Ukhiya Upazila in Cox's Bazar District. The site location is relatively a high plain land and accessible through vehicles as of 10ft wide HBB road is present near the site which connects with Cox's Bazar-Teknaf highway. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Ukhiya
Union	Palongkhali
GPS position	21°12' 25.6"N and 92° 09' 37.8"E
Distance from Upazila HQ	6.5 km
Nearby major road	Cox's Bazar- Teknaf highway
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2021]

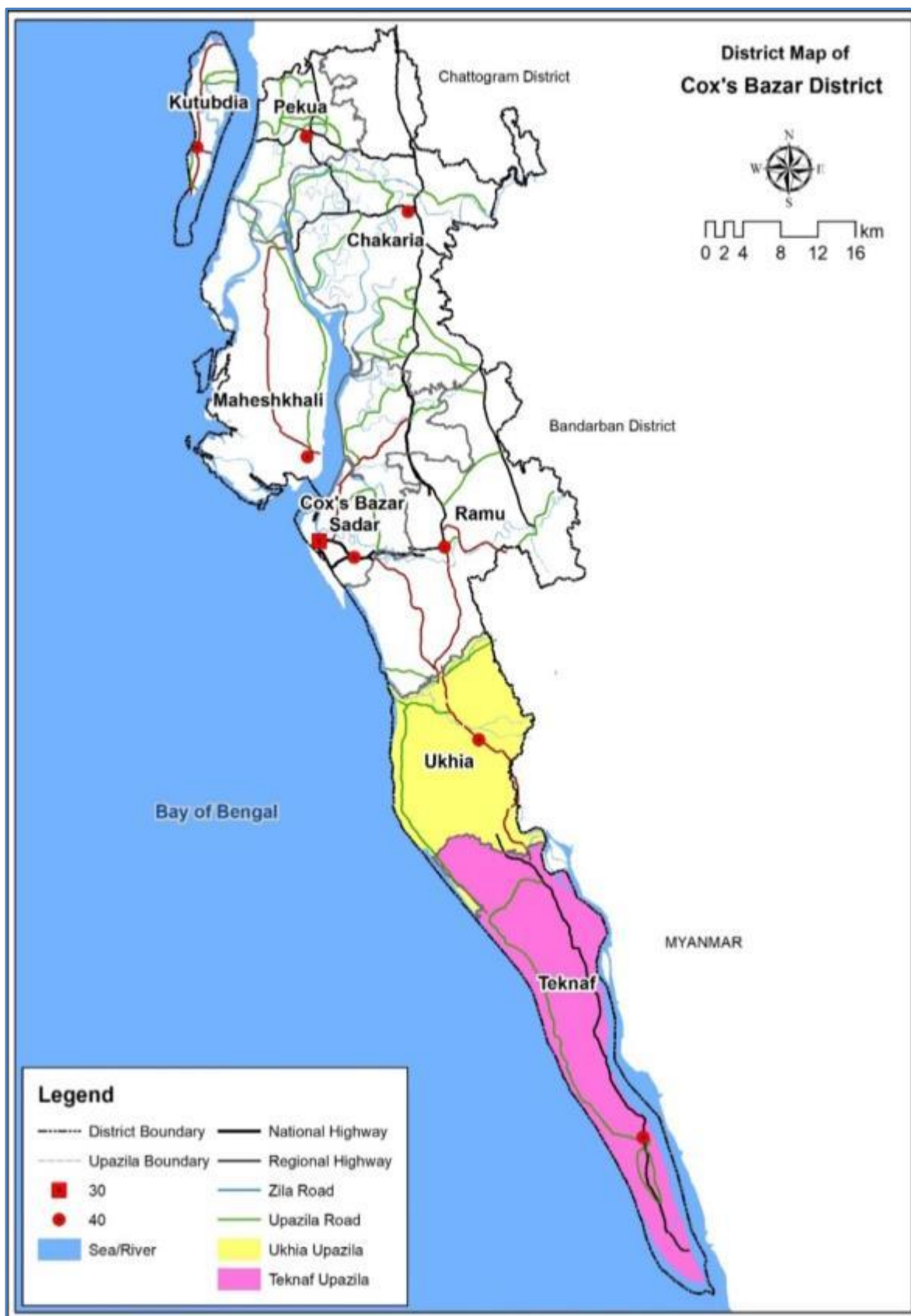


Figure 1.3.1: District Map with project location

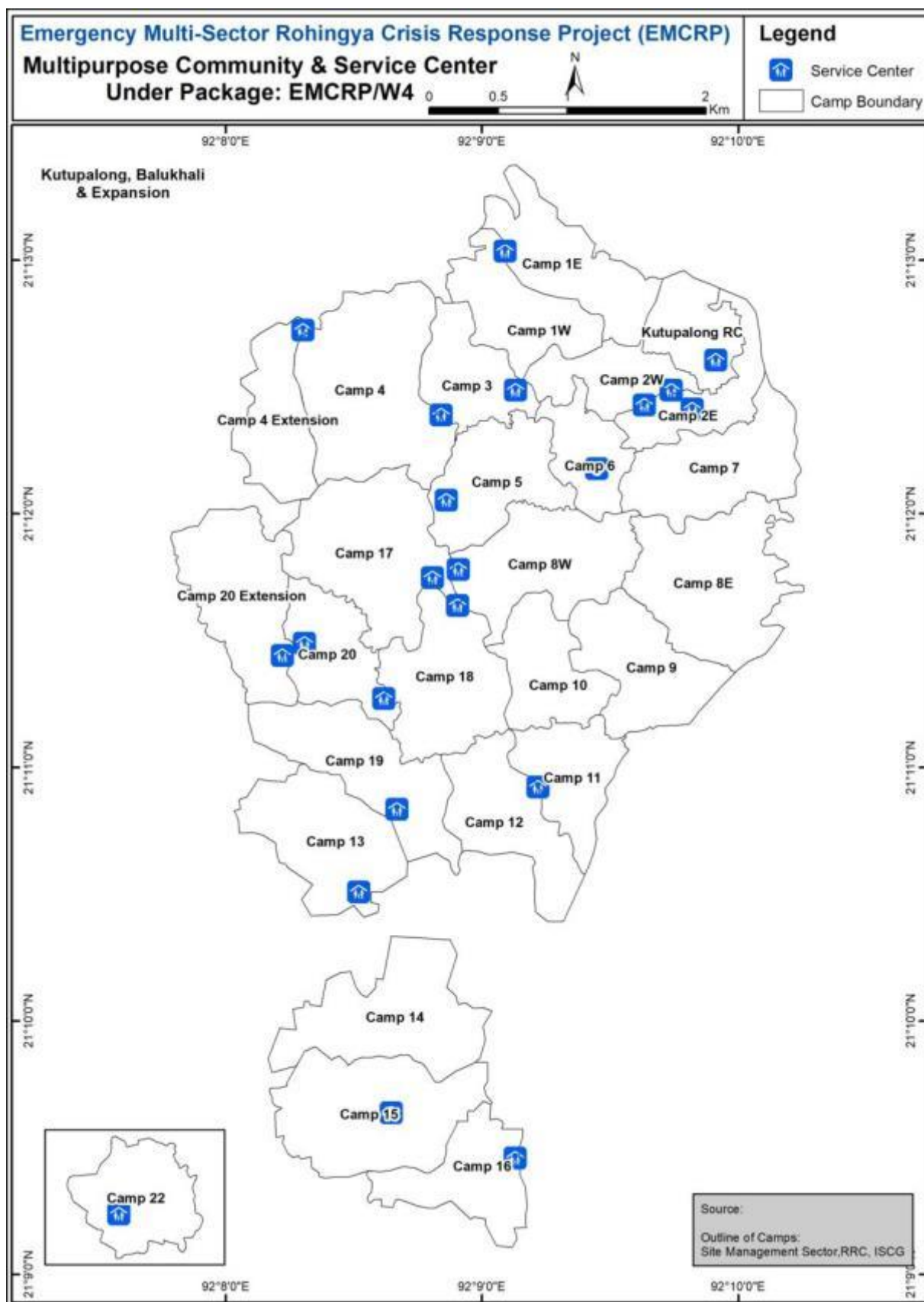


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)

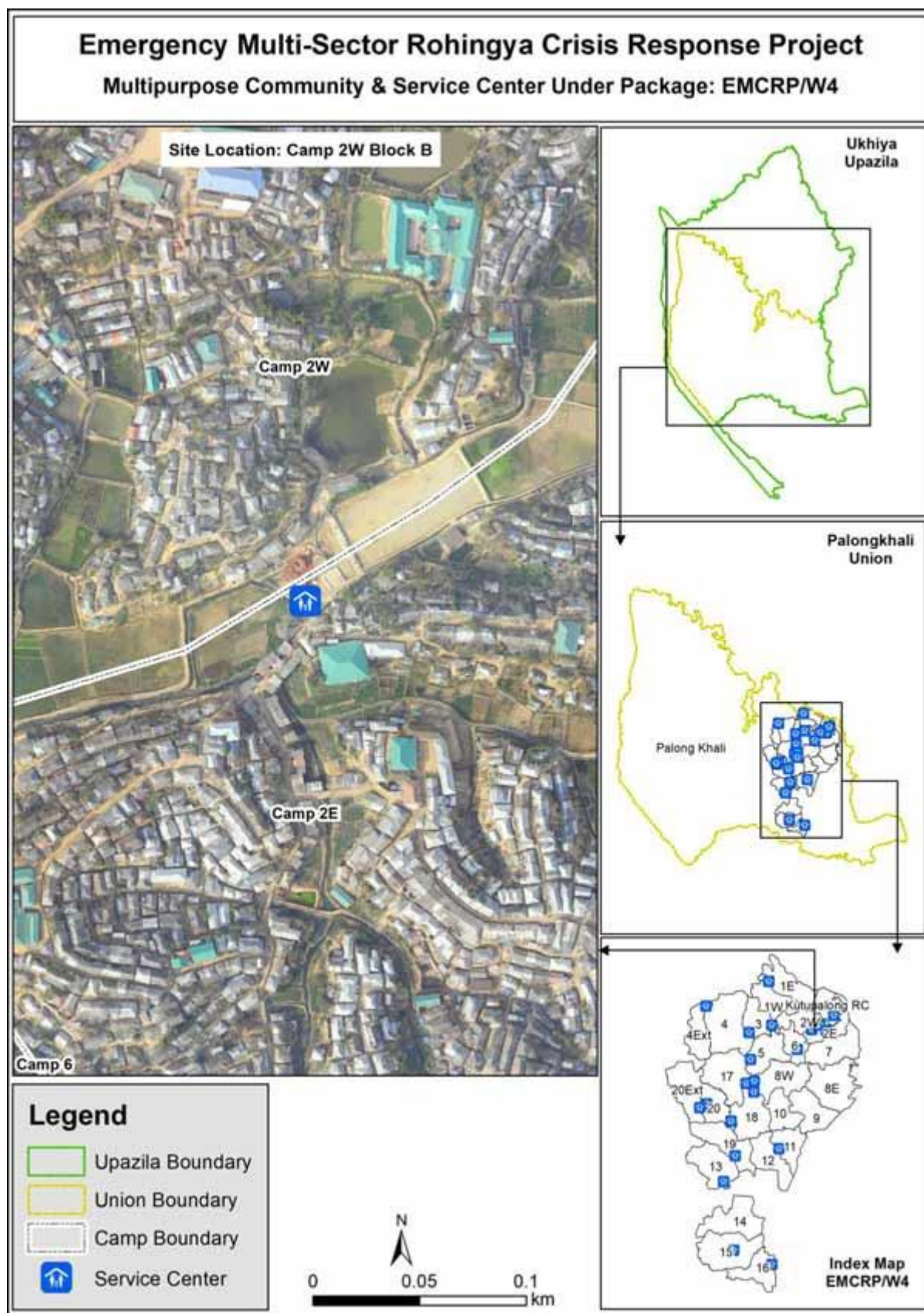


Figure 1.3.3: Union Map with Sub-project location in Camp area

1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	Shelter on high hill (10m), Toilets(12m), Pond (100m), CiC office(200m)
South side	Shelter(10m), Drain(5m),
East side	DRC Relief Distribution center(15m),
West side	Agriculture Field(30m), Open Field(30m), Mosque(100m), Madrassa(100m)

[Sources of data: D&SC Field survey, 2021]



Figure 1.4.1: Present condition of the Sub-project area



Figure 1.4.2: Proposed location of MPSC construction

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 15 March 2020 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 10 persons and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location in particular has no major complications and is in relevance with the CiC office authority currently. Present Camp in Charge has suggested to start the development works as early as possible.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Rohingya Camp 2W; Block-B and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Consultation with CiC Authority



Consultation with DRP

Figure 2.1.1: Public Consultation Meeting in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people considered that the selected site is suitable for the construction of Multipurpose service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.
- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.
- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.

- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment. Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 15 March 2020 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected site allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. On the north side Shelter on high hill (10m), Toilets(12m), Pond (100m), CiC office(200m); On the south side Shelter(10m), Drain(5m); On the east side DRC Relief Distribution center(15m); on the west Agriculture Field(30m), Open Field(30m), Mosque(100m), Madrassa(100m). Few disturbance to some of these establishments/features is anticipated due to construction activities for the case of not being in a sufficient distance from the construction site which is why safety measures such as, strict construction site management system- including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the

site, proper fencing around the working area, safe storage of materials et cetera should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from piling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from piling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routes and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the mitigation options, different initiatives have been undertaken, such as formation and capacity development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones, as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree planation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones have been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tubewell in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose Community and Service Center will be constructed on a high land where some matured vegetation is found. Due to the construction activities of this Sub-project, 3-5 nos. of trees (small and medium size) will be cut down and as a mitigation measure, 10 nos. of trees will be

replanted in the target location. Further, some settlements around the sub-project area might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall effects for this proposed construction works are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.
- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.
- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures are being realized over time. A comprehensive monitoring framework is suggested in Project ESMF



and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguards specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed

guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.
- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.

Appendix-1**Environmental Screening Form**

Sub-Project Description Form: (MPSC of Rohingya camp-2W, Block-B)

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Ukhiya

Union: Palongkhali

Name of Community/Local Area: Palongkhali, Rohingya Camp-2W.

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose community and Service Center Steel Frame 2-storey building will be constructed within target location.

Estimated footprint / land area for this sub-project is 3742.47 sq. feet

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.): Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified location on Rohingya camp area. On the north side Shelter on high hill (10m), Toilets(12m), Pond (100m), CiC office(200m); On the south side Shelter(10m), Drain(5m); On the east side DRC Relief Distribution center(15m); on the west Agriculture Field(30m), Open Field(30m), Mosque(100m), Madrassa(100m). Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any



adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to demolition of an old building and later construction of a new building on the same place. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic and human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified. On the north side Shelter on high hill (10m), Toilets(12m), Pond (100m), CiC office(200m); On the south side Shelter(10m), Drain(5m); On the east side DRC Relief Distribution center(15m); on the west Agriculture Field(30m), Open Field(30m), Mosque(100m), Madrassa(100m) are present on the surrounding target area.

Some degree of disturbance is anticipated due to construction activities to those components since they are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration route is present nearly 2 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 02. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

Sub-project Location:

The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district. The sub-project area is located at 21°12' 25.6" N and 92° 09' 37.8" E. The distance from the Upazila



headquarter is about 6.5 km. Nearby major road is Cox's Bazar- Teknaf highway.

Land ownership

Land is owned by Government.

Expected construction period: 18 (Eighteen months)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

Project intervention area is found to be an open space with vegetable yard, but influence area should consider nearly half a kilometer radius around the proposed site.

On the north side Shelter on high hill (10m), Toilets(12m), Pond (100m), CiC office(200m); On the south side Shelter(10m), Drain(5m); On the east side DRC Relief Distribution center(15m); on the west Agriculture Field(30m), Open Field(30m), Mosque(100m), Madrassa(100m) but there is no chance to disturbance during this construction activity.

But there is no scope to be affected by the construction activities. No structures, trees and livelihood will be affected by this construction activity. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby.

Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

Section B: Environmental Screening

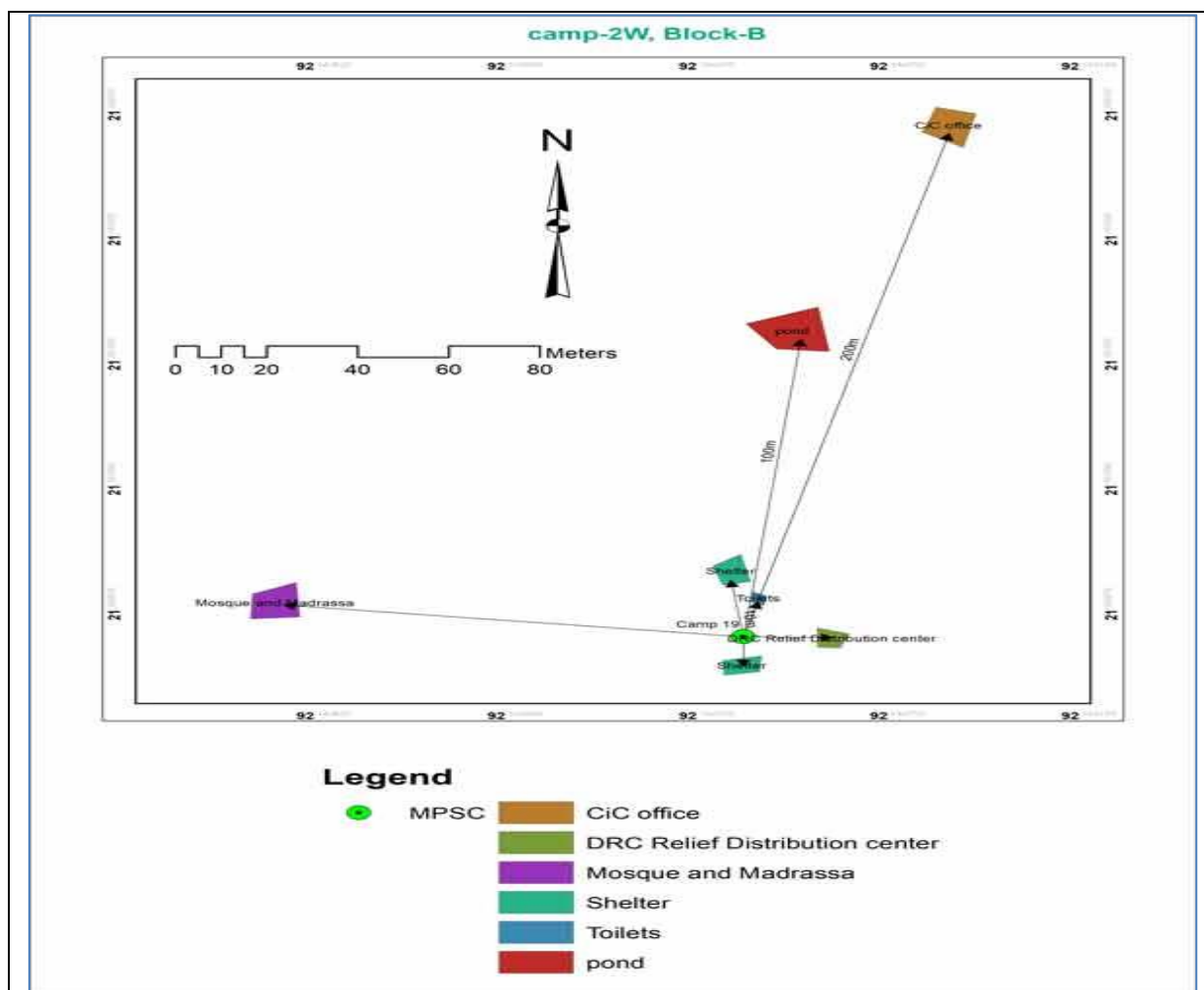
B.1: Environmental feature of sub-project location

Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

On the north side Shelter on high hill (10m), Toilets(12m), Pond (100m), CiC office(200m); On the south side Shelter(10m), Drain(5m); On the east side DRC Relief Distribution center(15m); on the west Agriculture Field(30m), Open Field(30m), Mosque(100m), Madrassa(100m)

There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.



Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. Several mosques, madrasa, pond and DRP settlement were found during the survey. Those will not be affected by the construction works, as the activities will be carried out within the existing selected boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

(1) Within/near Elephant Migration Routes Yes/No*

There is no existence of Elephant corridor/ route now, which have been checked on the basis of elephant migration route map established by UNHCR/IUCN (latest updated maps as of 22 February 2018 and later June 05, 2018).

(2) potential impacts on remaining forests in/around camps Yes/No

N/A (This activity will be ensured in DRP community and within existing camp boundary)

(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:
Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation):

N/A (the sub-project will be constructed in a plain land and within an identified camp boundary)

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 800 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2019). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

State of forestation:

Patches of vegetation containing large and matured trees across the road side of the proposed subproject area are located within 200m radial distance.

Summary of water balance analysis (For water supply scheme only): N/A

B.2: Pre construction Phase
Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable):

A HBB road is passing on the south and east side of the sub-project. It is possible to carry the construction materials on this road to the construction site.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:

Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.

Possible location of labor camps:

Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.

Requirement and type of raw materials (e.g. sand, stone, wood, etc.):

i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes vii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and viii) clay are the most common type of building material used in construction.

Identification of access road for transportation (Yes/No):

A HBB road is passing on the south and east side of the sub-project. It is possible to carry the construction materials on this road to the construction site.

Location identification for raw material storage:

Adjacent to labor camp or different location is available. However, this will need placement on open fields and should be consulted with CiC authority.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase
Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And

the quantity will be tentatively 200 kg.
Type and quantity of raw materials used (wood, bricks, cement, water, etc.): Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period. Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.
Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards: Around 3742.47 sq. feet land is required for the sub-project establishment. There is reasonable vegetation around the sup-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.
Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation) Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.
Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description) No pre-existing drainage channel is found. Though a marshy land is found outside of the construction area, but will not be affected because of having a fair distance from the construction site and the adoption of proper construction site management practices.
Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description) Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.
Activities that can lead to landslides, slumps, slips and other mass movements in road cuts: The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

N/A
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles: During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.
Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description) There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.
Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description) Low. The proposed multipurpose community and service center will be equipped with full facilities for conducting multipurpose services to targeted people, including separate toilets (sanitary) for male and female persons, water supply and filtration, storage and other facilities. No fecal sludge will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be produced in a typical day and higher amount of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC authority should be made aware of this separation and disposal procedure.
Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation) There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.
Likely direct and indirect impacts on economic development in the project areas by the sub-

**project:**

During the operation phase, this Multipurpose Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There is no protected area in or around the project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

The proposed site is located inside the camp area. A HBB road connects the sites with main road. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc. therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere.	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. - Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	students, children, animals, etc.)		• Proper covering of dust producing materials with polythene sheet, • Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. • Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is Low	• Water spraying at the demolition site • Fencing / Installing barriers should be shield from dust and aggregates • Avoid usage of machines/equipment with extra noise; • Do not accumulate and burn waste at the site • Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders • It needs to Identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- Make mandatory the use of safety gears (helmets, safety belts, masks, gloves and boot) by workers depending on nature of work. - Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.			
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	Under the sub-project intervention, the overall score is low.	- Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. - Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. - Provision of waste bins/ cans, where	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity; Waste disposal record.	Prior to the start of Construction works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times.			
	Accidents	Under the sub-project intervention, the overall score is low.	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. - Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc. should be available in the site during construction period.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score is low.	- Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage. - Involve the community in planning the work	Contractor, environmental specialist of D&SC	Number of complaints from stakeholders, Use of silencers in noise	Daily



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			program so that any particularly noisy or otherwise invasive activities can be scheduled to avoid sensitive times. • Avoid using of construction equipment producing excessive noise at school time & at night. • Ear protection devices for the workers & site staffs should be available in site during construction period.		producing equipment and sound barriers, Noise Level following decibel meter (dB)	
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation	Under the sub-project intervention, the overall score is low.	• Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. • Use tarpaulins to cover soils, sand and other loose material when transported by trucks. • Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free. • Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). • Limiting speed of construction vehicles in work sites to maximum of 20 km/h.	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution control devices, Maintain	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	measures.		Regular monitoring of air quality.		records	
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	- Prohibit employees from cutting of trees for firewood. - If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. - Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	- Prevent excessive noise; - Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); - No fires permitted on site except if needed for the construction works; - Staff must be trained up for operating equipment, - Availability and access to first-aid equipment and medical supplies. - Ensure the presence and use of safety gear at site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets, Uniforms etc., - Ensure adequate supply of drinking water.	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at project location;	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Sanitation facilities for male & female workers separately.			
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - All affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; - All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; - The contractor must arrange the cancellation of all temporary services.	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works
	Odor& waste disposal	Under the issue the overall score is low.	Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and PMU	Complaints from communities	Site inspection daily / weekly basis.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Vegetation	Under the issue the overall score is low.	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions.	Over the completion of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turfing, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required.* Mention some recommendation on E&S assessment ESMP

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.

**Appendix-2****Environmental and Social Management Plan (ESMP) of this Sub project (site specific)**

ESMP for Construction of 22nos. Multipurpose Community and Service Center Steel Frame Building (LGED/EMCRP-W4): MPSC of Rohingya Camp-2W, Block-B

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	- Selected site will be far away from any water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.	PIU & Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	- Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. - It will be ensured that proper training and guidance are provided on general and occupational health and safety to	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Contractors' personnel and labors forces, and records of training sessions are to be kept on site. All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling.	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Adequate facilities ensuring sanitation for labor camps will be put in place. - Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labour forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation,	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared time to time for all types of work activities on site. - Proper walkways will be prepared for students and teachers in existing school boundary. - Proper Signpost at any slippery areas will be ensured in	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	mobile plant and vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	construction site. - Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration.		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Adequate quantities of drinking water will be available at all Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation &	Maintenance of assets,	Periodic maintenance of building structures, plumbing,	The party CiC	UNO, Upazila



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Maintenance	properties and equipment	water filtering and electric equipment has to be carried out. - Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.	find fit	Chairman of Upazila Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.



- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.
- Kitchen space disassembling must be treated with same level of accuracy and caution.
- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.

For wastes generated from construction and demobilization debris:

- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.



- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.
- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site;
- Burning of any type of wastes in the construction site shall be prohibited completely.

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Appendix-3

Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 20,000	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles	LS	LS @ Tk 30,000	30,000
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	2 nos.	@10,000 each	20,000
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as	2 no.	LS @ Tk. 30,000	60,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.			
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. The Safeguard personnel will take duty for 11 sites, so one-eleventh of the personnel cost is counted here.	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months (1/11 one site). (Net payment excluding Tax & VAT)	57,272.73
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73

**Cost of H&S Measures under COVID 19 Situations**

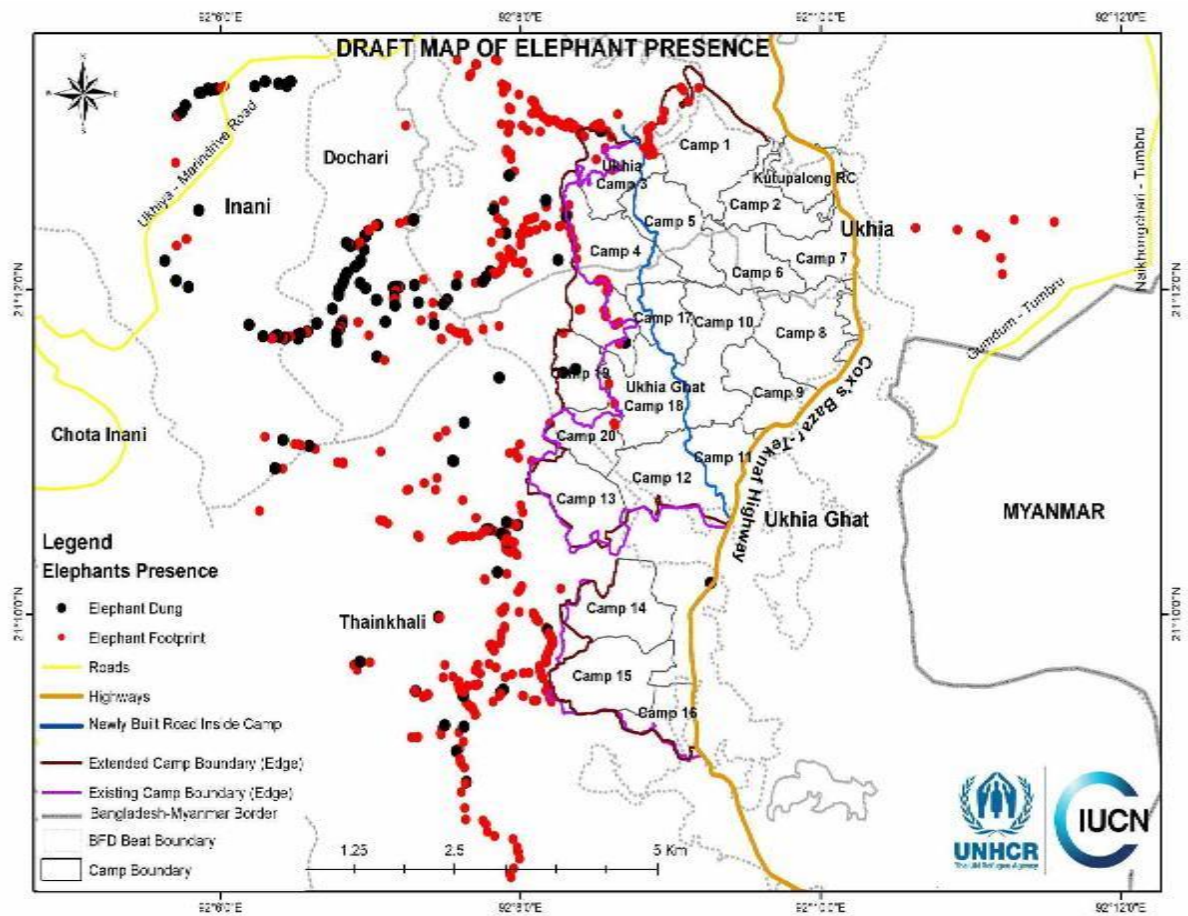
Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for	2 bottles and 1 Can for each	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office



Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
	Refill)	site						
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						165,125.00	

Appendix-4



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

জরুরী ভিত্তিতে রোহিঙ্গা সংকট মোকাবেলায় মাল্টি সেক্টর প্রকল্প

Local Government Engineering Department (LGED)

Public Consultation Participants List

Focus Group Discussion

সময় : ৩:২৫

তারিখ : ১৩.০৩.২০২০

উপ-প্রকল্প/কম্পোনেন্ট এর নাম : MPSC-Camp-2W, Block-B

মত বিনিময় স্থান : Camp-2W, Block-B-CIC office ভাং মসজিদ

ইউনিয়ন : পানছালী ওয়ার্ড নং :

জাকবর : রূপসী

উপজেলা : টেকনা

জেলা : কক্সবাজার

সার প্রকল্প নং : EMCRP/W-4

অংশগ্রহণকারীদের হাতিয়া (পরিচয় ও স্বাক্ষর)

ক্রম নং	নাম	বয়স	পুরুষ/নারী	গ্রাম	স্বাক্ষর / চিহ্ন
১	মোঃ হামিদ	২৫	পুরুষ	Camp-2W	মোঃ হামিদ
২	আবদুল মোতাম্মর	২০	u	u	ASD
৩	আবদুল হক	৫২	u	u	আবদুল হক
৪	মোঃ আলী	২৫	u	u	মোঃ আলী
৫	মোঃ আমিন	২০	u	u	Amir
৬	মোঃ মাহমুদ	২৪	u	u	মোঃ মাহমুদ
৭	আবদুল	৩০	u	u	আবদুল
৮	মোঃ আবদুল	২৫	u	u	Abdul
৯	আবদুল	৩৫	u	u	আবদুল
১০	আবদুল	৩৫	u	u	আবদুল

Public consultation participant list



Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762

IDA Credit No. 5561-BD



ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:

Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District.

Under the Package No. EMCRP/W4

Component Name: Multipurpose Community and Service Center of Rohingya Camp-22, Block-C1,
Type-3

Union: Whykong; Upazila: Teknaf

District: Cox's Bazar

Funded by:



Government of the People's Republic of Bangladesh & World Bank

Design and Supervision Consultancy:



Development Design Consultants Ltd.

March 2021

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ACRONYMS

BOQ	Bill of Quantities
CiC	Camp in Charge
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department

MPSC	Multi-purpose Community and Service Center
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank



1. INTRODUCTION

1.1 Project background

An estimated 730,000¹ people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033². This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service delivery system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely improvement of hat bazars, roads (both inside and outside of the camps), bridges, culverts, construction of School cum multi-purpose disaster shelters, Satellite Fire Stations, Relief Distribution Center, Community Service Center and many other different types of facilities. - Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

¹ ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)

² IOM Needs and Population Monitoring round 12 as of October 10, 2018

1.2 Rationale of Site Selection for disaster shelters under the project

Increase in number of DRP from the last wave migration in 2017 has brought increased demand for space and services. Utilization of the land capacity offered by Rohingya camp locations of Ukhiya and Teknaf Upazila is a crucial subject of demand base analysis through which facilities should be introduced. According to the Ministry of Health and Family Welfare of the Government of Bangladesh, there are approximately 3.4 physicians and two nurses per 10,000 refugees, which is lower than the national average of five physicians per 10,000 population³. On the other hand, education is another basic right for any human child which needs focus as well. On the press release of Save the Children back in August 2020, it was estimated that almost 76 thousand infants were born in past three years⁴ (every year an average 25,333). These children will need schools to ensure sense of civilization and fair share of opportunity. It is highly imperative so that while residing on this sovereign country they do not add to national crisis to any extent. Displaced Rohingya population growth goes to show that, indeed having extant health services from various sources, further attention is needed in this regard. Locations under camp boundaries are suited for ensuring assistance to growth. Otherwise, it may result in a health crisis where Child health, maternity health or overall well-being associated with nutritional status, survival or growth will come into despair effecting long term on national interest and available resources. With a target to improve the accessibility to health and education, such facilities are to be placed in the Rohingya camp areas where these migrated people seeking asylum from persecution can avail their rights to health service in order to maintain their right to life⁵. The proposed Multipurpose Community and Service Centers are to offer the facilities which will improve the availability.

These Multipurpose Community and Service Center will be complementing the numbers of extant schools and hospitals being implemented under other government and non-government initiatives for the Rohingya population of the areas. Every camp location which are identified for this intervention will establish benefit from it. Camp in Charge authority will steer the operation of these structures and will judge the best fit practice for them.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced population.

Under the package of LGED/EMCRP-W4, a new Multipurpose Community and Service Center (MPSC) will be constructed under Whykong union, Ward 3 in Rohingya camp number 22 of Teknaf Upazila under Cox's Bazar district. The catchment area of the subproject comprises the surrounding area of Rohingya camp 22. Typical camp settlement settings of the area are no exception than other camp

³ Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh. Forcibly Displaced Myanmar National to Bangladesh: Health situation & Interventions Update. Health situation & Interventions Update, 26 July 2020.

⁴ Save the Children Press Release; Bangladesh & Myanmar: More than 100,000 babies born in refugee and displacement camps in recent years. Update, 24 August 2020.

⁵ The Universal Declaration of Human Rights

locations. Relevant significant features of the sub-project area and the proposed MPSC architectural features have been tabulated in Table 1.2.1 and 1.2.2.

Table 1.2.1: Significant features of the area and the Sub-project

Name of the sub project	Rohingya Camp-22, Block-C1
District	Cox's Bazar
Upazila	Teknaf
Union	Whykong
Owner of land	Government
Land Available (sq.ft.)	4840
Structural Design Option	Type-3 (Rectangular Steel Frame 2-story building (80 feet x 41 feet 7 inches)
Catchment area	Camp-22
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	There is no direct route to connect the facility since it is inside camp location.
Land acquisition	Not required
Current land condition	The location is on open space

[D&SC and Field survey, 2021]

Table 1.2.2: Proposed MPSC architectural features of the Sub-project

MPSC of Camp-22; Block-C1		
Feature type	Quantity	Dimension
Total Floor Area (ft. ²)	Whole	3336
Number of Floors	2	3336X2
Number of Class room (sq. feet)	3	each@ 11'-7" X 19'-1"
Healthcare Room	1	14'-10"X12'-0"
Store Room	1	14'-10"X8'-6"
Toilet (male)	1	13'-5"X10'-10"
Toilet (Female)	1	13'-10"X9'-11"
Operation Room	1	14'X7'
Drinking Water Facility	Yes	Not Applicable
Maintenance Room	1	20'X21'-0"
Water Tank	2	Not Applicable

The objective of this Environmental Screening Report is to screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.

1.3 Location of Sub-Project

The Sub-project is located in Rohingya camp-22, Block-C1 of Teknaf Upazila, Ward 3 in Cox's Bazar District. The site location is relatively a low land but not accessible through vehicles as of 4ft wide HBB road is present near the site which does not connect with any main road. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location, Location map of Multipurpose Community and Service Center building in Ukhiya & Teknaf Upazila and Union Map with Sub-project location have been shown in Figure 1.3.1, Figure 1.3.2 and Figure 1.3.3 respectively. The Center is designed as a multipurpose functional building that shall accommodate a good number of people while act as school and service center.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox's Bazar
Upazila	Teknaf
Union	Whykong
GPS position	21.193973 N and 92.148408 E
Distance from Upazila HQ	28 km
Nearby major road	Army road
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2021]

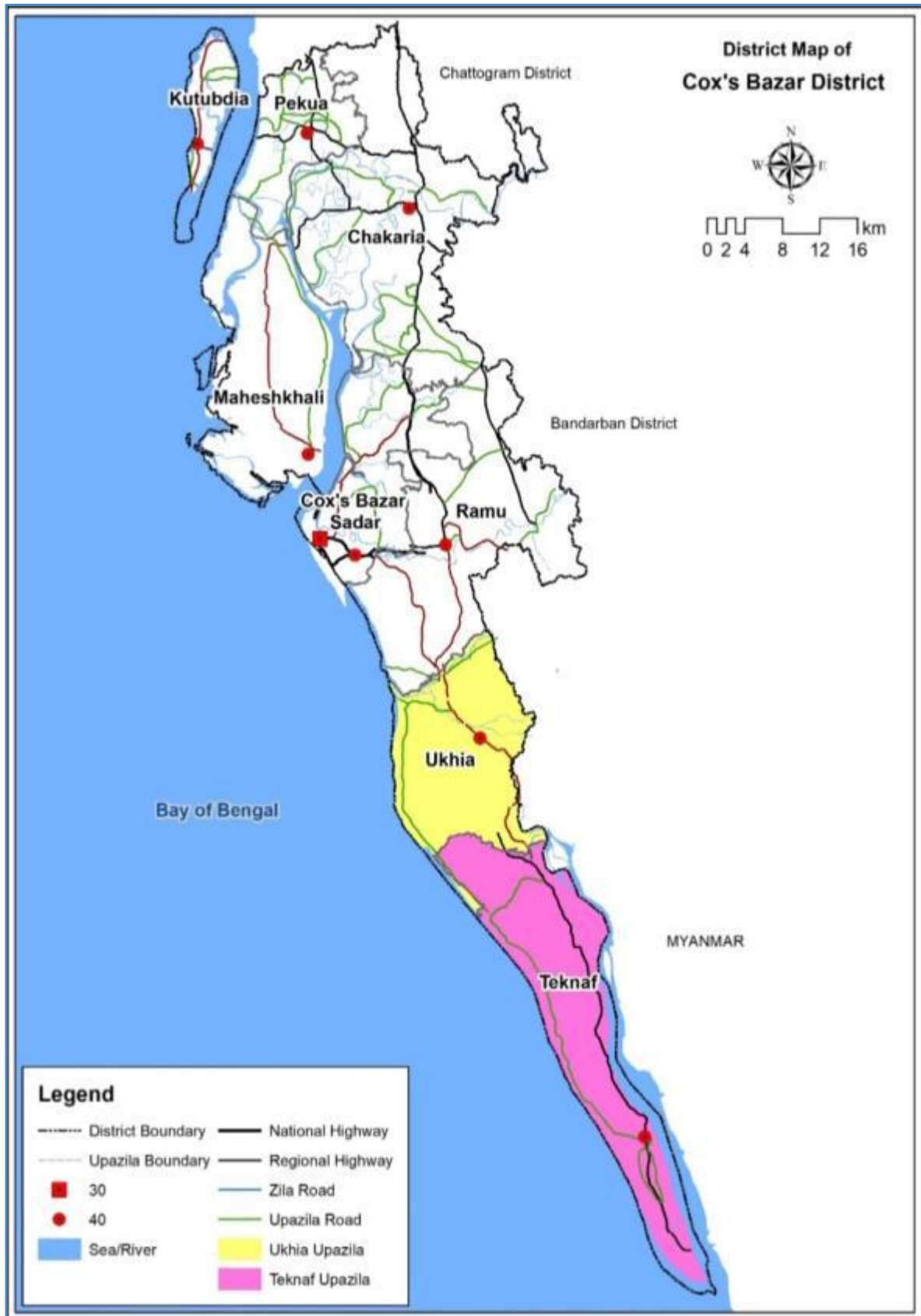


Figure 1.3.1: District Map with project location

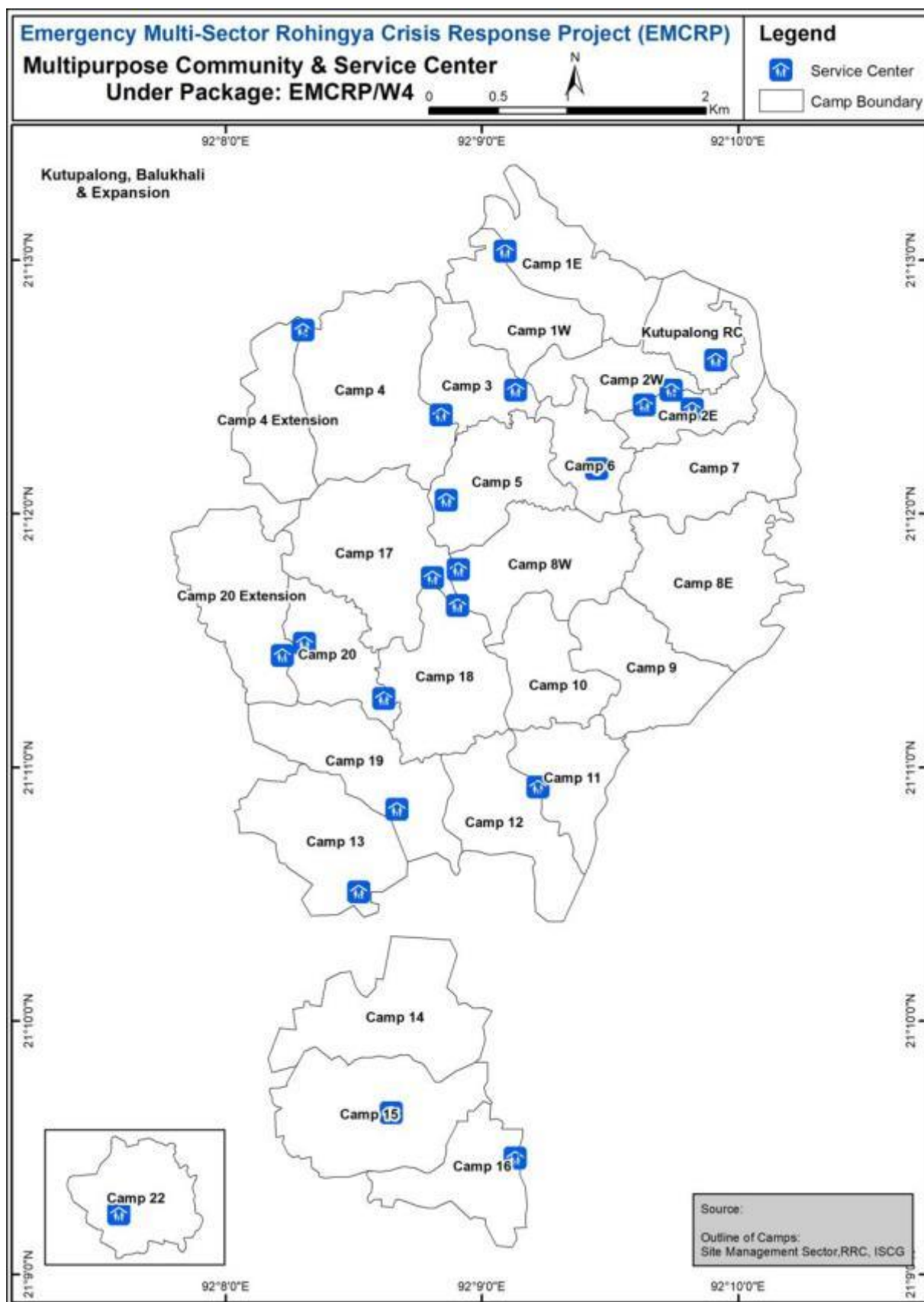


Figure 1.3.2: Location of Multipurpose Service Center Steel frame building (Ukhiya & Teknaf Upazila)

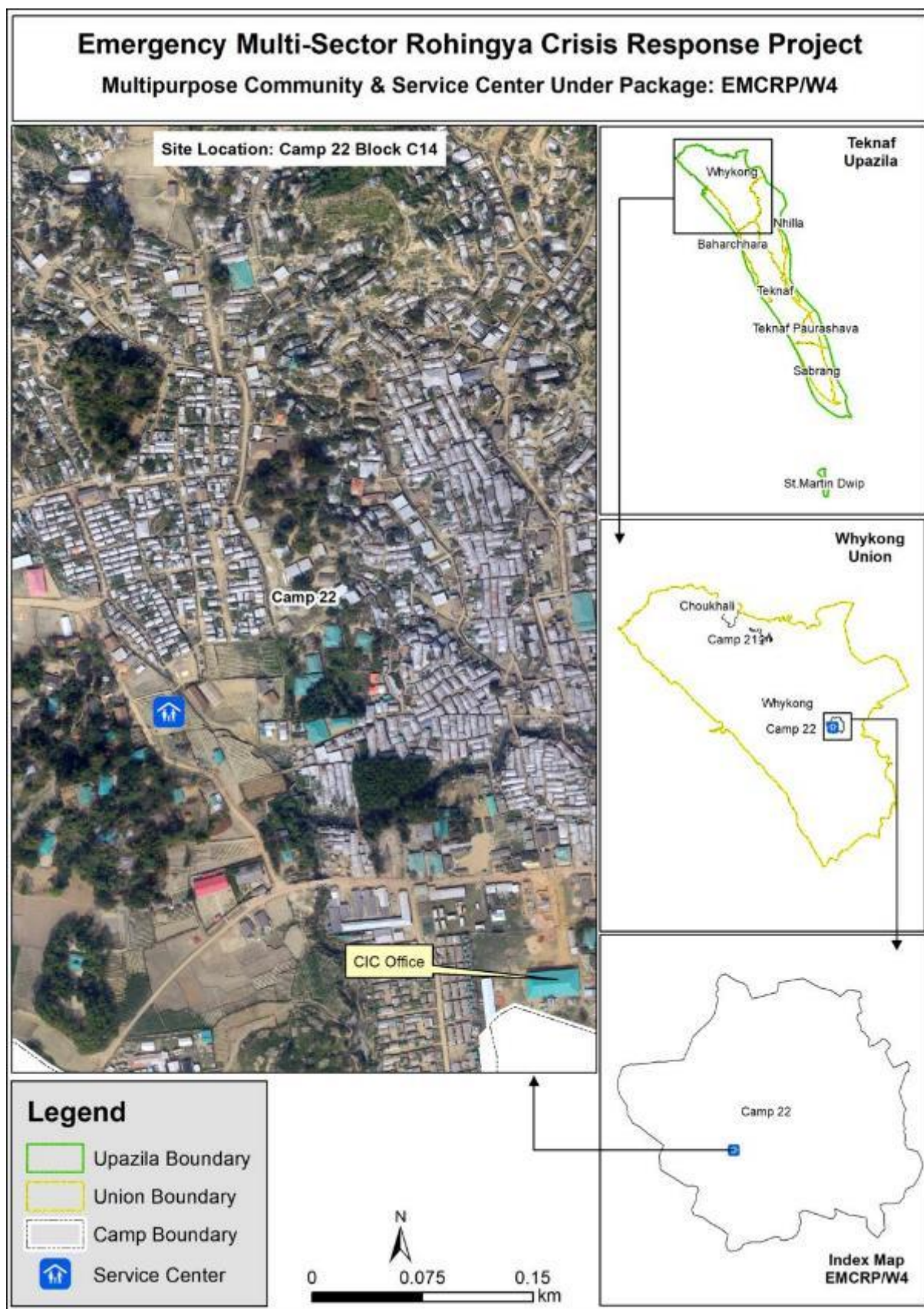


Figure 1.3.3: Union Map with Sub-project location in Camp area

1.4 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within one km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.4.1. Photographs showing present condition of the Sub-project area and location of construction area has been shown in Figure 1.4.1 and 1.4.2 respectively.

Table 1.4.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	Tubewell (5m), Solar plant (15m), Mosque (120m), DRP toilet (70m), DRP settlements (80m), Boschorra (400m)
South side	Forkania Jame mosque (100m), DRP settlements (35m), Camp bazar (200m), CiC office (450m), graveyard (500m)
East side	Learning center (10m), Mosque (100m), Nakara jhiri hill (700m), Brac school (30m)
West side	Brac learning center (12m), Ziapori Buddhist Bihar (400m), shops (10m), Hurbunia chorra (150m)

[Sources of data: D&SC Field survey, 2021]



Figure 1.4.1: Present condition of the Sub-project area



Figure 1.4.2: Proposed location of MPSC construction

2. PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. Field visit has been carried out on 21 March 2021 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 10 persons, and they were mostly Rohingya population. The participants were selected from different age tiers of stakeholders. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. In some cases, Camp in Charge were present in a separate consultation even consulted over phone in order to leave them on the same page as well and harnessing them from their points of views. Their concerns and comments were very critical for this intervention development also for the safeguard screening as well, since all of the items are selected in side camp locations. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by CiC office only. This location in particular has no major complications and is in relevance with the CiC office authority currently. Present Camp in Charge (CiC) has suggested to start the development works as early as possible.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the Multipurpose Community and Service Center of Rohingya Camp 22; Block-C1 and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, its benefits, and associated social and environmental aspects and possible mitigation measures.



Consultation with CiC Office Authority



Consultation with DRP

Figure 2.1.1: Public Consultation Meeting in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a facility so that, they can get assistance in case of emergency and have access to education for their children.
- Lack of adequate learning center in the existing camp premises.
- Lack of adequate spaces for consultation for women.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Inadequacy of toilet facilities- separately for male and female in all other existing facility.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- Local people considered that the selected site is suitable for the construction of Multipurpose service center from both the technical (disaster shelter with ramp, strong windproof windows, water supply facilities in all floors etc.) and social point of view.
- Center should have a bigger capacity to sufficiently cater the DRP of the catchment area.

- The participants have expressed their greater interest for this Service center for their community and using this facility for education purpose.
- Separate male and female latrines should be present.
- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc.
- They have also ascertained that the selected site is free from any events related to resettlement and environmental impacts.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will be of short duration, yet proper management/conservative options should be adopted.

3. ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment. Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures, an extensive field visit was carried out on 21 March 2021 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed sub-project (construction of Multipurpose Service Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected sited allocated by Camp in Charge (CiC) where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Within 1 km area there are nothing but camp settlements and few social institutions. On the north side of the sub project Tubewell (5m), Solar plant (15m), Mosque (120m), DRP toilet (70m), DRP settlements (80m), Boschorra (400m); on the south side of the sub-project area Forkania Jame mosque (100m), DRP settlements (35m), Camp bazar (200m), CiC office (450m),

graveyard (500m); on the east side Learning center (10m), Mosque (100m), Nakara jhiri hill (700m), Brac school (30m) and on the west side Brac learning center (12m), Ziapori Buddhist Bihar (400m), shops (10m), Hurbunia chorra (150m). Few disturbances to some of these establishments/features is anticipated due to construction activities for the case of not being in a sufficient distance from the construction site which is why safety measures such as, strict construction site management system-including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials et cetera should be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from piling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Vibration effect generated from piling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies.

There is no evidence of presence of elephants in the subproject area currently. A few incidents of human elephant conflict have been reported in 2018. The IUCN has conducted a study on such conflict. With the support from UNHCR, IUCN has been marking elephant routs and corridors and informing local communities and stakeholders of avoiding the marked areas. As part of the mitigation options, different initiatives have been undertaken, such as formation and capacity development of Elephant Response Teams (ERTs); providing equipment to ERTs to divert in-coming elephants; and setting up elephant deterrent tools (e.g. trip alarms and watch-towers). Though the current chances of occurrence of conflicting incidence are becoming narrow, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact Screening

3.3.1 General Overview of the area

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank⁶ has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

⁶ <https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf>

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the risk of cyclone. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones, as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree planation in sub-project areas, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones have been seen to have increased in the past few years. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed shelter. Ramp for cattle and physically challenged people, separate toilets for male and female, tubewell in the school building, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the shelter. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly along the school premises.

4. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed Multipurpose Community and Service Center will be constructed on a high land where some matured vegetation is found. Due to the construction activities of this Sub-project, trees (small and medium size) will not be cut down and as well as 10 nos. of trees will be planted in the target location. Further, some settlements on 10m south side of sub-project area might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the least level. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Contractor's staffs and workers will be given training on good practice construction works, health safety, and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. With all the required efforts, once the overall effects for this proposed construction works are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the Rohingya communities.

The subproject specific environmental management plan has been outlined in **Appendix-2**. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, primarily under the Ukhiya and Teknaf Upazila of Cox's Bazar district in order to offset the environmental and ecological devastation, that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Many of these road lengths will go through and by the Rohingya Camps, up on the hill and are already denuded of trees or vegetation. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&SC, along with the pool of

consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site office.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

- a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
- b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.
- c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
- d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
- e. Necessary protocols have to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.
- f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/W4 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures

of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures are being realized over time. A comprehensive monitoring framework is suggested in Project ESMP and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities and DRPs. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g. drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineers' office in Ukhiya and Teknaf will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguards specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors

cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

With the countrywide spread of coronavirus and its huge detrimental including fatal effects on people and livelihood had made the government of Bangladesh to impose a nationwide lockdown from March 26, 2020 onward coupled with banning on passenger traveling across the districts. This development was accompanied by all office works to be suspended or postponed. However, in the backdrop of continued fragile economic and human plight being observed across the country which has primarily been caused by this COVID situation, Government of Bangladesh has had no other option but to reopen all the economic and official activities by early June, with strong guidance on limiting movement to the least. This neo-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.



- The green belt development, if necessary, for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.

Appendix-1**Environmental Screening Form**

Sub-Project Description Form: (MPSC of Rohingya Camp-22, Block- C1)

Name of Sub-Project: Construction of 22 nos. Multipurpose Community and Service Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W4)

Implementing Agency/Agencies: Local Government Engineering Department (LGED)

Estimated total cost of sub-project (in Taka): 3,750 Lac

Estimated construction period duration: 18 months

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar

Sub-District: Teknaf

Union: Whykong

Name of Community/Local Area: Unchiprang, Putibunia, Rohingya Camp-22.

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One Multipurpose community and Service Center Steel Frame 2-story building will be constructed within target location.

Estimated footprint / land area for this sub-project is 4840 sq. feet

Brief description of sub-project site: (e.g., present land use, Important Environmental Features (IEFs) near site, etc.):

Proposed Multipurpose community and Service Center Steel Frame Building will be constructed within an identified location on Rohingya camp area. On the north of the sub project Tubewell (5m), Solar plant (15m), Mosque (120m), DRP toilet (70m), DRP settlements (80m), Boschorra (400m); on the south side of the sub-project area Forkania Jame mosque (100m), DRP settlements (35m), Camp bazar (200m), CiC office (450m), graveyard (500m); on the east side Learning center (10m), Mosque (100m), Nakara jhiri hill (700m), Brac school (30m) and on the west side Brac learning center (12m), Ziapori Buddhist Bihar (400m), shops (10m), Hurbunia chorra (150m). Being in a camp location, surrounding area is mostly inhabited by DRP along with NGO offices and social institutions as mosque and learning centers.

Overall Comments

People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The subproject is environmentally sustainable and socially acceptable. DRP community representatives as Majhi and other Rohingya people attended in the participatory public consultation meeting. They do not have any objection to the construction this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure social services. The public consultation meeting results confirmed that presence of this Multipurpose Service Center will increase the access to medical attention and increased options for education. This will also make way to ensure children's right to play. They also requested to keep provision of post-disaster services and facilities in sanitation and hygiene.

The proposed Sub-project area for the construction of Multipurpose Service Center is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects. As the building construction work is restricted to within the school boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:

During construction period solid waste will be generated due to construction of a new building on the selected place. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic and human wastes might be generated in labor camps.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) of site including elephant migration routes and remaining forests:

Within the influence area of the subproject no historical sites were identified. On the north side of the sub project Tubewell (5m), Solar plant (15m), Mosque (120m), DRP toilet (70m), DRP settlements (80m), Boschorra (400m); on the south side of the sub-project area Forkania Jame mosque (100m), DRP settlements (35m), Camp bazar (200m), CiC office (450m), graveyard (500m); on the east side Learning center (10m), Mosque (100m), Nakara jhiri hill (700m), Brac school (30m) and on the west side Brac learning center (12m), Ziapori Buddhist Bihar (400m), shops (10m), Hurbunia chorra (150m) are present on the surrounding target area.

Some degree of disturbance is anticipated due to construction activities to those components since they are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration route were nearly 1 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

A Multipurpose Community and Service Center will be constructed within the boundary of an existing Rohingya camp area, which typically will be used as versatile and will follow the structural design Type 03. Usually, this option follows the construction of a 2- story building with ground floor being open for entrance and flooding by the potential tidal surge during cyclonic events, 1st floor usually being kept open but bounded with wall for shelter of cattle and the 2nd floor is designed to be used for class rooms, operation room and separate male and female toilets (with septic tank) with spaces for other facilities. These spaces will be used to deliver any emergency services and shelter to DRP community during cyclonic storm events. Safe water supply will be ensured, water treatment (primary) for harvested rainwater is included and solar panels will be provided. The class rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed on higher than the expected surge levels. A walkway will be constructed from the camp entrance to the proposed building for the ease and safe movement during the rainy season.

**Sub-project Location:**

The sub-project area is situated in Palongkhali Union under Ukhiya Upazila of Cox's Bazar district. The sub-project area is located at 21.193973 N and 92.148408 E. The distance from the Upazila headquarter is about 28 km. Nearby major road is Army road.

Land ownership

Land is owned by Government.

Expected construction period: 18 (Eighteen months)

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location was conducted:

Project intervention area is found to be an open space, but influence area should consider nearly half a kilometer radius around the proposed site.

On the north side of the sub project Tubewell (5m), Solar plant (15m), Mosque (120m), DRP toilet (70m), DRP settlements (80m), Boschorra (400m); on the south side of the sub-project area Forkania Jame mosque (100m), DRP settlements (35m), Camp bazar (200m), CiC office (450m), graveyard (500m); on the east side Learning center (10m), Mosque (100m), Nakara jhiri hill (700m), Brac school (30m) and on the west side Brac learning center (12m), Ziapori Buddhist Bihar (400m), shops (10m), Hurbunia chorra (150m) but there is no chance to disturbance during this construction activity.

But there is no scope to be affected by the construction activities. No structures, trees and livelihood will be affected by this construction activity. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby.

Within the influence area of the subproject no historical sites were identified. Currently, there is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

Section B: Environmental Screening**B.1: Environmental feature of sub-project location**

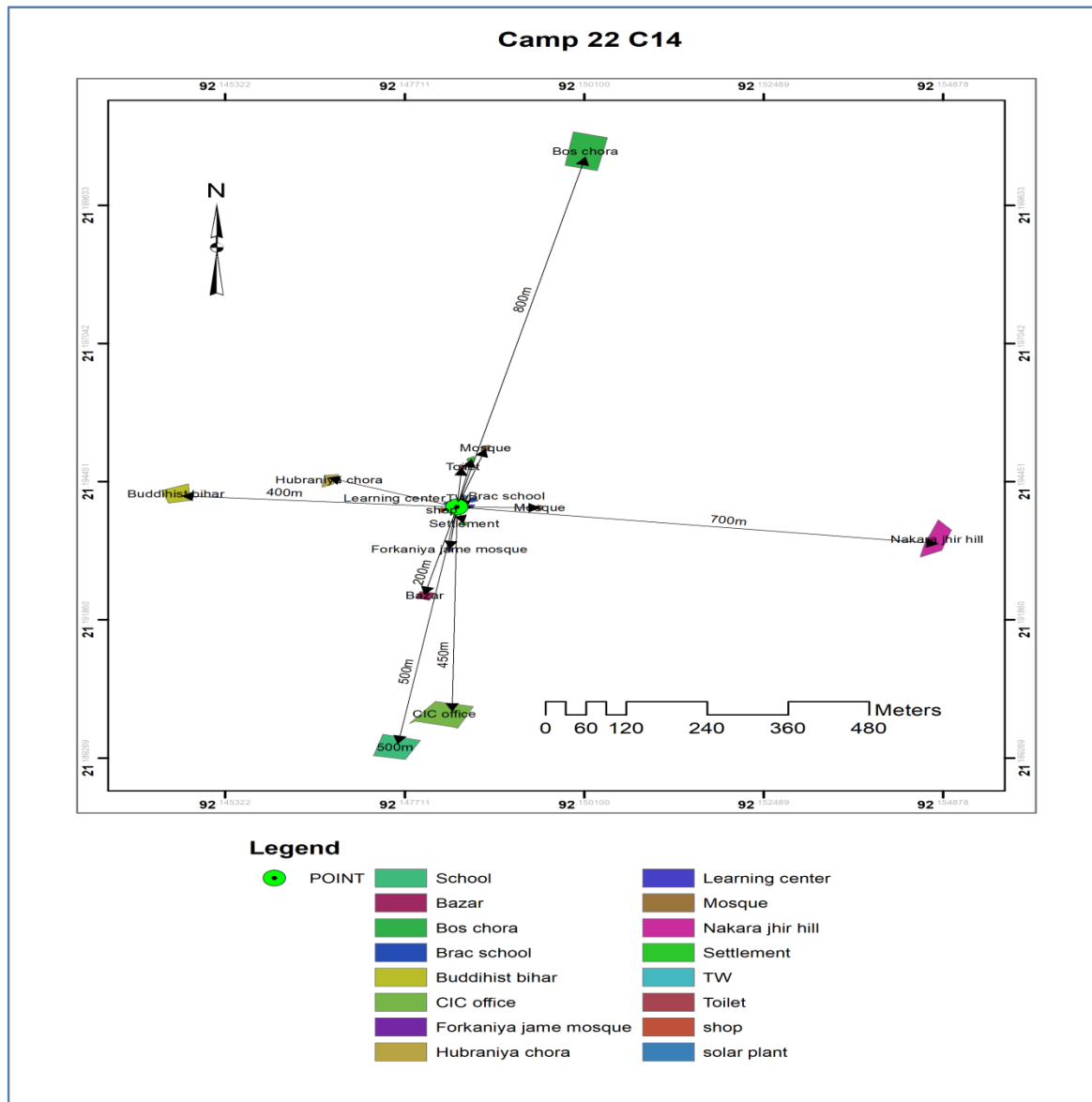
Description of cultural properties (if applicable, including distance from site):

Sensitive environmental, cultural, archaeological, religious sites near (within the catchment area) of site including elephant migration routes and remaining forests:

On the north side of the sub project Tubewell (5m), Solar plant (15m), Mosque (120m), DRP toilet (70m), DRP settlements (80m), Boschorra (400m); on the south side of the sub-project area Forkania Jame mosque (100m), DRP settlements (35m), Camp bazar (200m), CiC office (450m), graveyard (500m); on the east side Learning center (10m), Mosque (100m), Nakara jhiri hill (700m), Brac school

(30m) and on the west side Brac learning center (12m), Ziapori Buddhist Bihar (400m), shops (10m), Hurbunia chorra (150m).

There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.



Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around the site. It will not be affected by the construction works, as the activities will be carried out within the existing camp boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

(1) Within/near Elephant Migration Routes Yes/No*

There is no existence of Elephant corridor/ route now, which have been checked on the basis of elephant migration route map established by UNHCR/IUCN (latest updated maps as of 22 February

2018 and later June 05, 2018).

(2) potential impacts on remaining forests in/around camps Yes/No

N/A (This activity will be ensured in DRP community and within existing camp boundary)

(3) Other issues:

No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:

Dust:

Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of vehicles such as motor cycle, tempo, trolley, tractor around the camp area.

Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible/ preventable by mitigation measures.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, tractor, trailer, etc. move around the sub-project location throughout the day generate noise but within tolerable limit in most cases.

Baseline soil quality:

The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.

Landslide potential (high/medium/low, with explanation):

N/A (the sub-project will be constructed in a plain land and within an identified camp boundary)

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Groundwater is the main source of potable water around the Sub-project area. The shallow depth is about 300 feet and deep tube well depth is 800 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2019). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (IWM Study Report, 2019)
Status of wildlife movement:
N/A (None of the information was found about the wildlife movement in or across the area)
State of forestation:
Patches of vegetation containing large and matured trees on all edges of the proposed subproject area are located within 200m radial distance.
Summary of water balance analysis (For water supply scheme only):
N/A

B.2: Pre construction Phase

Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable):
A 12ft HBB road is passing on the west side of the sub-project. It is possible to carry the construction materials on this road to the construction site.
Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction:
Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.
Possible location of labor camps:
Labor camp can be established alongside the sub-project location. However, this will have to be done with the consent of CiC authority under a mutual agreement, with the supervision of the Engineer in charge.
Requirement and type of raw materials (e.g. sand, stone, wood, etc.):
i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes viii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and ix) clay are the most common type of building material used in construction.
Identification of access road for transportation (Yes/No):
12ft HBB road is passing on the west side of the sub-project. It is possible to carry the construction materials on this road to the construction site.
Location identification for raw material storage:
Adjacent to labor camp or different location is available. However, this will need placement on open

fields and should be consulted with CiC authority.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):

Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can be a high probability generating liquid waste. Waste from civil works. And the quantity will be tentatively 200 kg.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) Bitumen are the most common type of raw materials to be used in construction period.

Quantity: Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

Around 3336 sq. feet land is required for the sub-project establishment.

There is reasonable vegetation around the sup-project area. The vegetation will not be affected by construction work. The open area inside the camp boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

Low: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)



Existing drainage channel is found at east side of the sub-project location. Though a marshy land is found outside of the construction area, but will not be affected because of having a fair distance from the construction site and the adoption of proper construction site management practices.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

The soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide or any type of mass movement of soil for the said construction works.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)

N/A

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:

During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this camp and while passing over the adjacent muddy road; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief distribution work is intensified for the sheltered people. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.

Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)

There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.

Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)

Low. The proposed multipurpose community and service center will be equipped with full facilities for conducting multipurpose services to targeted people, including separate toilets (sanitary) for male and female persons, water supply and filtration, storage and other facilities. No fecal sludge will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be produced in a typical day and higher amount of wastes including organic kitchen wastes will be produced during the emergency period. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the camp site and any water bodies, and covered with layers of soil in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing off underneath the soil and CiC authority should be made aware of this separation and disposal procedure.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

During the operation phase, this Multipurpose Service Center will improve the social condition of the DRP of the catchment area by providing better education, paving the way to get access to further development and better service, which would eventually give access to broader development in both personal and societal level and improved living conditions. Further, this facility will have improved capacity to serve Rohingya community and will play a strong pivotal role in preserving social security and ultimately help them gain better health and social life which certainly will have a huge positive impact.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)

No existing drainage channels or surface water bodies are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

There is no protected area in or around the project sites, and no known areas of ecological interest.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)

N/A



Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

The proposed site is located inside the camp area. A HBB road connects the sites with main road. The roads are mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc. therefore, during operation period traffic congestion is not expected. However, if not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur due to the bad condition of the access road and unsafe driving through it.

High = Likely to cause long-term impacts or over large area (>1sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1sqkm); Low = Likely to cause little, short-term damage and over small area (<0.5sqkm)



Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1. Sub-project Interventions	Construction of a Multipurpose Community and Service Center (degradation of air, water and soil quality, and local hydrology)	Under the sub-project intervention, the overall score is low	- Limiting earthworks; - Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; - Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere.	Contractor, environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			- All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. - Monitor water quality according to the environmental management plan.			
2.Pre-construction Phase	Site planning (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention, the overall score is low.	- The construction area is on a plain land. The entire construction area within the camp boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. - Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of students, children,	Under the sub-project intervention, the overall score is low.	- The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. - Proper procedure for stockpiling/ storage of construction materials at the site will be proposed by the contractor & approved by the Environmental Specialist of D&SC. - Proper covering of dust producing materials with polythene sheet,	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	animals, etc.)		• Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by students, children, animals, etc. • Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of an existing structure	Under the sub-project intervention, the overall score is low	• Water spraying at the demolition site • Fencing / Installing barriers should be shield from dust and aggregates • Avoid usage of machines/equipment with extra noise; • Do not accumulate and burn waste at the site • Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders • It needs to Identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies • Make mandatory the use of safety gears (helmets, safety belts, masks, gloves and boot) by workers depending on nature of work.	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.			
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	Under the sub-project intervention, the overall score is low.	- Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. - Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. - Construction of sanitary latrine with septic tank for both male and female workers and staffs. - Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity; Waste disposal record.	Prior to the start of Construction works



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. Camp and working areas are to be kept clean and tidy at all times.			
	Accidents	Under the sub-project intervention, the overall score is low.	- Provision of standard safety protocol. - Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. - Training should be scheduled twice, once before starting the construction & another in the middle of construction period. - Safety & protection gears, first aid box etc. should be available in the site during construction period.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase
3. Construction Phase	Noise Impacts	Under the sub-project intervention, the overall score is low.	- Avoid high noise making activities during active hours. One very effective method is to discuss with the CiC authority and settle for a time for heavy machinery usage. - Involve the community in planning the work program so that any particularly noisy or otherwise invasive activities can be scheduled to avoid sensitive times. - Avoid using of construction equipment	Contractor, environmental specialist of D&SC	Number of complaints from stakeholders, Use of silencers in noise producing equipment	Daily



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			producing excessive noise at school time & at night. • Ear protection devices for the workers & site staffs should be available in site during construction period.		and sound barriers, Noise Level following decibel meter (dB)	
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.	Under the sub-project intervention, the overall score is low.	• Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. • Use tarpaulins to cover soils, sand and other loose material when transported by trucks. • Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free. • Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). • Limiting speed of construction vehicles in work sites to maximum of 20 km/h. • Regular monitoring of air quality.	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution control devices, Maintain records	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	Under the sub-project intervention, the overall score is low.	- Prohibit employees from cutting of trees for firewood. - If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. - Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention, the overall score is low.	- Prevent excessive noise; - Construction staff are to make use of the facilities provided for them (e.g., fires for cooking); - No fires permitted on site except if needed for the construction works; - Staff must be trained up for operating equipment, - Availability and access to first-aid equipment and medical supplies. - Ensure the presence and use of safety gear at site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets, Uniforms etc., - Ensure adequate supply of drinking water.	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at project location;	Monthly



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			Sanitation facilities for male & female workers separately.			
4. Post-Construction Phase	Construction clean-up (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention, the overall score is low.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - All affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; - All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; - The contractor must arrange the cancellation of all temporary services.	Contractor	Worksite is restored to original conditions; worksite cleanup is satisfactory; camp has been restored to pre project conditions.	After the completion of Works
	Odor& waste disposal	Under the issue the overall score is low.	Use bin covers and/or tarpaulins during transport of wastes.	Contractor monitored by Consultant and PMU	Complaints from communities	Site inspection daily / weekly basis.



Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Vegetation	Under the issue the overall score is low.	After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions;	Over the completion of Works

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turfing, and minor rectification till the official handing over the site to LGED, or owner of the site.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required. Mention some recommendation on E&S assessment ESMP*

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.



Appendix-2

Environmental and Social Management Plan (ESMP) of this Sub project (site specific)

ESMP for Construction of 22 Multipurpose Service Center Steel Frame Building (LGED/EMCRP-W4): MPSC of Rohingya Camp-22, Block-C1

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	No land acquisition is allowed within this sub-project activity so, there is no mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	Under this subproject, there is no scope of negative impact on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	- All the project stakeholders will be consulted - Separate community level consultation meeting with the potentially affected HHs - Consultation meeting with nearby DRP about the project objectives and scope of works as well as CiC officials. - People living in nearby community and camp people will be involved with the GRM - All the stakeholders will be informed about the GRM.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	- In case of unavoidable circumstances, alternative access will be provided. - Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of	Selected site will be far away from any water bodies or	PIU & Contractor	Environmental Consultant of PIU,



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	natural drainage	natural flow path to avoid the flash flood or any kind or surface runoff. - Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. - The existing slope and natural drainage pattern on the site should not be significantly altered. - The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.		PSC
Construction Activity	Noise from construction works	- Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. - All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	- Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons. - Provision of using water sprinklers to dust control. - Construction materials should be covered properly while carrying in vehicles to the site. - Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	- Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. - It will be ensured that proper training and guidance are provided on general and occupational health and safety to Contractors' personnel and labors forces, and records of	Contractor	Environmental Consultant of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		training sessions are to be kept on site. All kinds of Child labor will be completely prohibited.		
Construction Activity	Traffic Management	Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. - If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Camp in Charge must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement and operation of heavy machineries and equipment. - Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. - Adequate facilities ensuring sanitation for labor camps will	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		be put in place. - Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labour forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e., chemical, oil, paint, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed of at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared time to time for all types of work activities on site. - Proper walkways will be prepared for students and teachers in existing school boundary. - Proper Signpost at any slippery areas will be ensured in construction site.	PIU & Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box in sub-project areas will be ensured. - Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. - Adequate quantities of drinking water will be available at all		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	Contractor	Environmental Consultant of PIU/D&SC, PSC
Operation & Maintenance	Noise disturbances to fauna	- Provision to maintain noise from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Fecal sludge from toilets to be disposed at proper location (such as Fecal Sewage Treatment Plant) - Proper disposal (such as incineration) of medical wastes from healthcare room.	The party CiC find fit	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Maintenance of assets, properties and	Periodic maintenance of building structures, plumbing, water filtering and electric equipment has to be carried out.	The party CiC find fit	UNO, Upazila Chairman of Upazila



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	equipment	- Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. - Water tanks should be cleaned properly at least once in a quarter.		Parishad
Decommissioning after useful life of the facility.	The impacts are similar to those listed in construction stage: - Pollution from waste materials - Health & Safety risks to workers and local community/DRPs	- Provision for proper mitigation measures and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. - Proper and safe sealing of septic tanks required - Solar panels and batteries need to be sold or disposed properly - Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those components seems to be significantly worse.	Contractor	Environmental Consultant, XEN, Cox's Bazar.

Demolition/Demobilization and Waste Management Plan:

The Contractor shall develop a demolition plan and a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food and organic waste etc.) prior to commencing of construction and submit to LGED for approval. The plans must include following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

For demobilization works:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.



- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.
- Kitchen space disassembling must be treated with same level of accuracy and caution.
- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;
- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.



For wastes generated from construction and demobilization debris:

- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach, and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Construction site shall be maintained in a cleaner, tidy and safe condition and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal.
- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area with separate container which cannot be carbonized under high temperature or incidents of fire and subsequently sold to authorized recyclers.
- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Organic wastes produced in the camp site during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site.
- Burning of any type of wastes in the construction site shall be prohibited completely.

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Appendix-3

Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for each MPSC

In consideration to the environmental impact's mitigation and healthy safety measures for each sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1	<u>Aid Box</u> Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
2	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3	<u>Health safety warning sign & Project Signboard</u> Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10000	10,000
4	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5	<u>Site Cleaning and preparation</u> Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 20,000	20,000



Sl no.	Description of item	Quantity	Unit price	Total amount
6	<u>Personal Protection Equipment for Workers</u> Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles	LS	LS @ Tk 30,000	30,000
7	<u>Tree plantation</u> Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 10 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	10 nos.	@ Tk. 1000 for each tree.	10,000
8	<u>Temporary Sanitary Latrine</u> Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
9	<u>Waste disposal</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	2 nos.	@10,000 each	20,000
10	<u>Drinking Water Facilities</u> Providing continuous adequate drinking water supply at worksite and site office as	2 no.	LS @ Tk. 30,000	60,000



Sl no.	Description of item	Quantity	Unit price	Total amount
	well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.			
11	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. The Safeguard personnel will take duty for 11 sites, so one-eleventh of the personnel cost is counted here.	1 person	Monthly basis @Tk.35000 for 18 months. One person covering 11 sites. i.e., 35,000tk X 18 months (1/11 one site). (Net payment excluding Tax & VAT)	57,272.73
	Subtotal Bill: Environmental facilities for each MPCS			348,772.73

**Cost of H&S Measures under COVID 19 Situations**

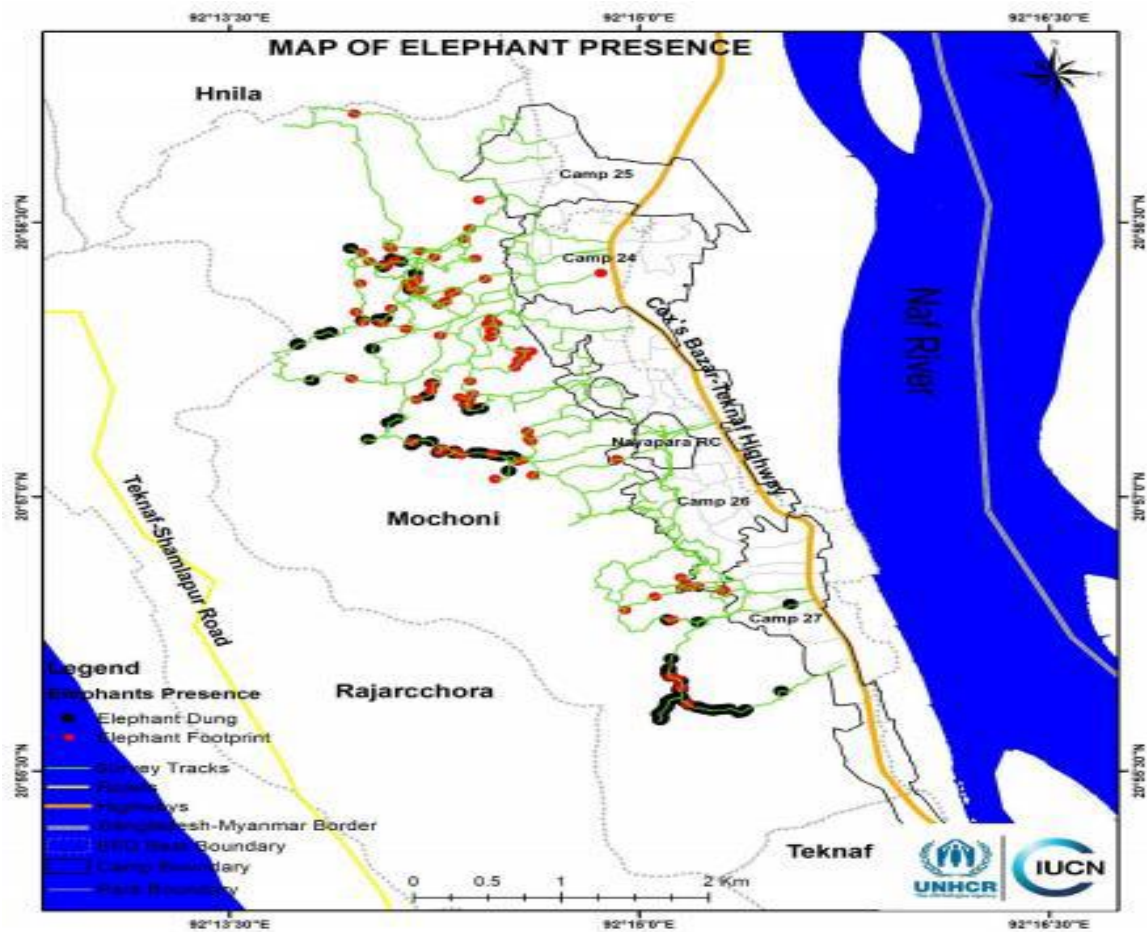
Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W4).

Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	
4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for	2 bottles and 1 Can for each	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office



Sl. No	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
	Refill)	site						
6.	Face Shield/ Protective Safety Goggles	12 nos. for each site		N/A	400.00	12	4,800.00	For labors who work in close contact, 12 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						165,125.00	

Appendix-4



Map 2: Elephant presence, along with traversing routes, around the camps 24, 25 26 and 27, based on elephant signs - foot-prints and dung piles. (Based on data from IUCN Bangladesh's field survey conducted during 13-24 May 2018 and on maps provided by the UNHCR)

Elephant presence map (latest information published by on 24 May 2018)

Appendix-5

Camp-22, Block-C14 Multipurpose Community and Service center (Package Number: EMCRP/W4)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

অকল্পিত ভিত্তিতে বোহিঙ্গা সংকট মোকাবেলায় মানসিক সেবায় সহায়তা

Local Government Engineering Department (LGED)

Public Consultation Participants List

Focus Group Discussion

সময়: 12:30 PM

তারিখ: 21/03/2021

উপ-প্রকল্প/কম্পোনেন্ট এর নাম: Camp-22, Block-C14 MPSC

মত বিমত স্থান: In the open space adjacent to the proposed MPSC Land, Camp-22 B-C14

ইউনিয়ন: Whykong ওয়ার্ড নং: 03 অঞ্চল: Putiburua উপজেলা: Teknaf জেলা: Cox's Bazar

সার প্রকল্প নং: EMCRP/W4

অংশগ্রহণকারীদের তালিকা (পরিচয় ও স্বাক্ষর)

ক্রম নং	নাম	বয়স	পুরুষ/মহিলা	গ্রাম	স্বাক্ষর / চিহ্ন
01	জামাল হোসেন	৬০	পুরুষ	Camp - 22 Block - C14	[Signature]
02	নাসিমা বেগম	৬২	মহিলা	11	[Signature]
03	আঃ মাকসুদ হোসেন	৪০	পুরুষ	গাজীপুর	[Signature]
04	আব্দুল্লাহ হোসেন	৬৬	11	11	[Signature]
05	আঃ হোসেন	৬৬	পুরুষ	Camp - 22 Block - C14	[Signature]
06	আঃ মাকসুদ	৬২	4	4	[Signature]
07	আব্দুল হোসেন	28	4	4	[Signature]
08	আব্দুল্লাহ হোসেন	29	4	4	[Signature]
09	আব্দুল হোসেন	22	4	4	[Signature]
10	আব্দুল হোসেন	৬০	4	4	[Signature]

Public consultation participant list