GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

Ministry of Local Government, Rural Development and Co-operatives

Local Government Engineering Department (LGED)

Environmental Screening Report

Under the package no. EMCRP/W1

Improvement of 6 nos. Hat Bazar under Cox's Bazar District.

Funded by:

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

Design and Supervision Consultancy:

Development Design Consultants Ltd.

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Contents

ACRONYMS

BOQ	Bill of Quantities
BMC	Bazar Management Committee
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 and Social Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
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
PIA	Project Influence Area
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 Band

1. INTRODUCTION

1.1 Project background

An estimated 730,000[1] 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 923,033[2]. 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 and improve the social service delivery systems to both the communities. This project will follow a sustainable development pathway that is resilient to disaster, climate change and promote developed communication mechanisms.

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 and providing better communication facility through physical interventions
- 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 Objective of the Sub-Project

In order to facilitate the local trading and meeting the needs for consumption of daily necessities, primarily of Rohingya communities living in different camp areas under Cox's Bazar district, Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has taken initiative to improve six hat Bazars in different camp areas. People from local communities also will also have access to these facilities, though disproportionately. This sub-project will thus surely aid in the betterment of the target location based facilities and initiate the growth potential of the area.

The sub-project has the primary target to improve the trading facilities of the area and ensure the supply of daily necessities, in an organized and efficient manner. This intervention, without a doubt facilitates the following: it will

- ✓ Support to rural development along with business or trading, agriculture, farming etc.
- ✓ Widen access to the government support for an organized and socio-environmentally acceptable trading system.
- ✓ Accelerate the earning potential of local government through revenue collection.
- ✓ Improve the local planning, coordination and work execution capacity
- ✓ Make a crucial contribution to economic development and growth and bring important socioeconomic benefits

This document represents the Findings from Environmental Screening of the sub-project components under the package name '**Improvement of 6 nos. Hat Bazar under Cox's Bazar District',** with the bid package no. **EMCRP/W1**.

1.3 Elementary information of Work Package Components:

It is imperative to recognize proposed components under Work Package-W1 in Ukhiya Upazila in order to assess and verify its interventions according to stipulated screening requisites from WB. Acknowledging this matter, such details are accounted for as given below in Table 1.4.1 along with visual presentation (General Upazila Map) given in Figure 1.4.1. Aerial maps for each sub-project is given in Appendix -7. Tentative Facilities in Each Hat Bazar has been tabulated in Table 1.2.1.

Table 1.2.1: Tentative Facilities of the Sub-project

Serial No.	Feature type	Dimensions	Coverage/No. of Facilities
1	Fish Shed	25'-0" x 15'-0"	1nos
2	Meat shed	25'-0" x 15'-0"	1nos
3	Multipurpose Shed	40'-0" x 15'-0"	1 to 2nos
4	Women's Market	40'-0" x 15'-0"	1nos
5	Open Sale Platform	40'-0" x 15'-0"	1nos
6	Toilet cum Urinal	15'-0" x 10'-0" (each)	2nos
7	Tube well	10'-0" x 10'-0" (each)	2 to 3nos
8	Very Shallow depth surface drain		(if and where required)
9	Internal Road		

Note: Depending on the budget allocation the above items may increase or decrease.

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.

Table1.2.2: Basic Featured Information of components [Sources of data: Field survey, 2020: DDC & LGED]

Sl. No.	Component's name under W-1	GPS Coordinates	Distance from Upazila HQ	Union	Camp No.	Locations under Project Influence area	Pre-existing condition of Hat-Bazar	Owner of land	Estimated Footprint (sq.feet) of Hat-Bazar
1.	Jamtali Shafiullah ghata (Rohingya Camp based Bazar)	21^{0}09'36" N 92^{0}08'55" E	15 Km	Palongkhali	15	Jamtoli-Bagguna, Shafiullah ghata	Casually, scattered, open temporary sheds	Govt.	110000 sq. feet
2.	Tajnimarkhola Kanthaltola (Rohingya Camp based Bazar)	21^{0}10'42''N 92^{0}08'36''E	13 Km	Palongkhali	13	Burmapara, Thainkhali & Tajnimarkhola	Casually, scattered, open temporary sheds	Govt.	8050 sq. feet
3.	Moynarghona (Rohingya Camp based Bazar)	21^{0}10'54''N 92^{0}09'14''E	10 Km	Palongkhali	11	Moynarghona (Rohingya Camp-11)	Casually, scattered, open temporary sheds	Govt.	15000 sq. feet
4.	Kutupalong Noukarmath (Rohingya Camp based Bazar)	21^{0}12'10''N 92^{0}09'38''E	7 Km	Palongkhali	7	DRP of Camp-7, 6 & 2E	Casually, scattered, open temporary sheds	Govt.	5000 sq. feet
5.	Lambashia (Rohingya Camp based Bazar)	21^{0}12'52" N 92^{0}09'23" E	5 Km	Rajapalong	1 (E)	Kutupalong, Lambashia & Modhuchora	Casually, scattered, open temporary sheds	Govt.	6500 sq. feet
6.	Muchra Uthni (Rohingya Camp based Bazar)	21^{0}12'14''N 92^{0}09'18''E	8 Km	Rajapalong	5	Muchra uthni (Rohingya camp-5)	Casually, scattered, open temporary sheds	Govt.	15000 sq. feet

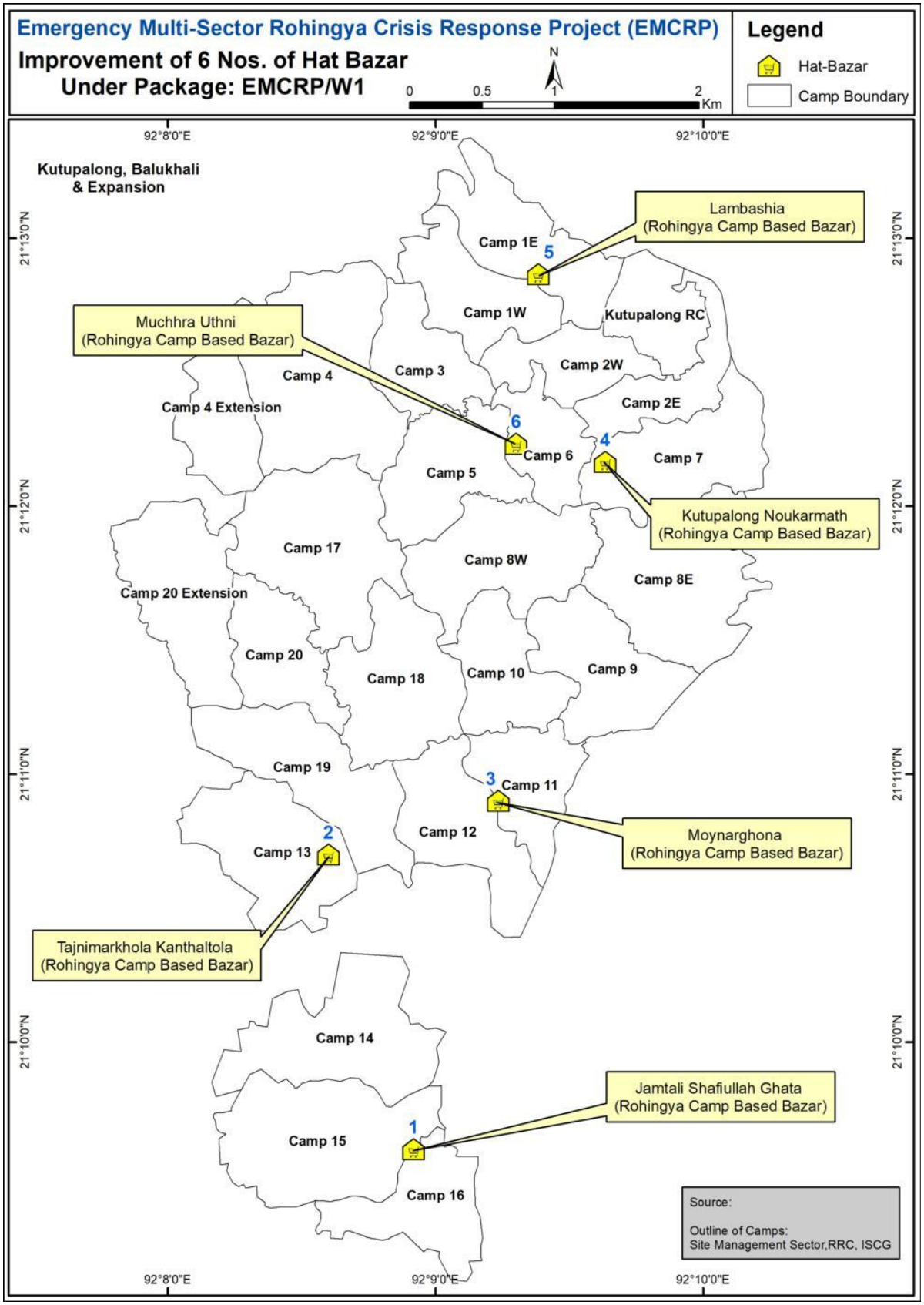

Figure 1.2.1: Map illustrating Hat-Bazar of Work Package W-1 locations in the Ukhiya Upazila

2. PUBLIC CONSULTATION, PARTICIPATION AND SURVEY FINDINGS

2.1 Methodology

Public participation and community consultation have been taken up as an integral part of environmental assessment process of the project. As part of the impact assessment, participatory public consultation was conducted in areas of concern for proposed Hat-Bazar by the field level staffs and consultants from PIU and D&SC. The consultation meeting was attended by Representatives of local government and Site Management entities (CiC, Site management, UP, NGOs etc), DRP, local stakeholders etc. In some cases, IUCN employees in charge of elephant watch tower were present where frequent elephant movements occur. The participants were also selected from different segments of stakeholders, and some of whom will have major active roles before, during and even after the construction works. 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 order to serve our screening process, relevant items were thrown towards the audience to discuss and troubleshoot confusing or worrying matters regarding the proposed intervention under the package work. Impacts in regards to environment and socio-economic matters during pre-construction, construction and post construction phases have been put forth. Possible mitigation measures and relevant needs have turn out during these sessions as well. Moreover, their comprehension as a stakeholder has been up lifted in light of project guidelines.

However, 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.

All components under the work package have been put through review for locating impediments or possible adversity affecting future environment and socio-economic conditions. In order to comprehend surrounding features and impacts which may stipulate with it, screening has acknowledged to have a Project Influence Area (PIA) of 1-kilometer radius. Extrapolation is not under any method of judgment therefore; specific items has been dealt with and considered distinctively. Sensitive findings have been identified if any, and relevant mitigation or minimization measures were suggested to subdue such complication for over the project life span. Moreover, evaluation was inspired to enhance environmental features and include monitoring initiatives under ESMP budget to ensure exertion of environmental improvement propositions. Contractor's responsibility has been taken into account while identifying possible impacts through sets of intervention accounts. These steps have been initiated strictly following ESMF guidelines and requirements. Environmental screening procedure was motivated by ingredients highlighted in Appendix-4 of ESMF.

2.2 Important features/establishments around the PIA

Primary theme here was to bring all key informants and representing members of the local community. Initial screening process is conducted through direct involvement of PIU and D&SC in the influence area of the proposed component, which allows to raise significant questions and ideas

towards participants. In combination of both field walk-through and inputs of audience, a register of existing features is formed. Allow the following table to describe such elements in all the work package components.

Table1.2.1: Important features under Project Influence Area

Sl. No.	Component's name under W-1	Catchment Area	Direction	Important features/ establishment (approx. distance from the proposed site)
1.	Jamtali Shafiullah ghata (Rohingya Camp based Bazar)	Camp 15 and 16	North	Comprehensive health care center (5m), Thaingkhali Bazar mosque (1km), Chiconchorra khal (1km), Rohingya camp-15 (50m), Tahingkhali Bazar (1km), Palongkhali UP (1km), Thaingkhali GPS (1km)
			South	Baghgona mosque (300m), Rohingya camp-15 (100m), Camp-15 CiC office (500m),
			East	Jamtoli Jame mosque (150m), graveyard (150m), Ukhiya-Teknaf highway (500m), Jamtoli station (500m), Jamtoli hill (600m)
			West	Rohingya camp-15, Jamtoli camp mosque (200m), Brac site office (300m), Fish farm (400m)
2.	Tajnimarkhola Kanthaltola (Rohingya Camp based Bazar)	Camp 13	North	DRP settlements (30m), shops (20m), camp mosque (100m), camp-19 (1km)
			South	DRP settlements (50m), shops (20m), camp mosque (200m), Churakhola (500m), brick field (200m)
			East	PHD Hospital (50m), shops (10m), mosque (300m), Gunarpara (500m)
			West	IOM Hospital (200m), DRP settlements (100m), Camp mosque (100m)
3.	Moynarghona (Rohingya Camp based Bazar)	Camp 11 and 12	North	Abu Dajjal mosque (30m), community center (100m), pond (10m),
			South	Block C-7 (100m), hill (10m), community center (100m), Camp 11 CiC office (500m)
			East	Mosque (100m), Block-6 (200m), Ukhiya-Teknaf highway (100m)
			West	Block-5 (10m), Army road (5m), Police camp (50m), Social forest (200m), DRP camp-12 (700m),
4.	Kutupalong Noukarmath (Rohingya Camp based Bazar)	Camp 6, 7 and 2E	North	Abujar Gaffari mosque (10m), DRP settlements (15m), Camp 2 CiC office (500m)
			South	DRP Settlements (8m), Water tank (350m), Block-F (10m), Block-G (500m)
			East	Abu Malek A Shahari mosque (250m), Block-G graveyard, DRP settlements (100m)
			West	DRP settlements (10m), Camp 6 CiC office (500m), Mukti Learning Center (100m)
			North	Shops (5m), Homestead forest (7m), DRP settlements

Sl. No.	Component's name under W-1	Catchment Area	Direction	Important features/ establishment (approx. distance from the proposed site)
5.	Lambashia (Rohingya Camp based Bazar)			(10m)
		Camp 1E and 1W	South	Shops (5m), Mosjid A Belal (50m), Social forest (15m), Clinic (1km), Community center (1km)
			East	Shops (10m), DRP settlements (8m), Mosque (20m), Kutupalong bazar (1km), Ukhiya-Teknaf highway (1km)
			West	Shops (8m), Baytur Nagar jame mosque (30m), DRP settlements (8m)
6.	Muchra Uthni (Rohingya Camp based Bazar)	Camp 6 and 5	North	Shops (5m), Muchra bazar mosque (10m), DRP settlements (15m), camp-3 (1km)
			South	FH Hospital (40m), Female market (10m), Mosque (30m), WFP Food distribution center (30m), DRP settlements (20m)
			East	DRP settlements (10m), mosque (500m)
			West	Connecting road (5m), DRP settlements (10m), a Khal (110 m), mosque (200m), camp-4 (1km)

2.3 Issues and Recommendations raised by the Participants in regards to component interventions

After facilitating the consultation sessions with a warm and informed manner at different places in the package areas, the participants and stakeholders drifted delightfully with the sessions and pointed out many issues and suggestions which were taken into account for further inclusion in design, estimation and formulation of ESMP. This part of assessment procedure is tabulated below to recognize participants' inputs arranged in relevance with each individual components of the sub-project. Consultation meeting summary, attendance sheets and pictures of separate meetings with proposed location for each sub-project can be found in Table 2.3.2 and Appendix-1 and Appendix-2 respectively.

Table 2.3.1: Issues and Recommendations raised by the Participants

Sl. No.	Component's name under W-1	Issues raised and discussed	Recommendations and Comments
1.	Jamtali Shafiullah ghata (Rohingya Camp based Bazar)	• Proposed Hat-Bazar is situated within the catchment area of Jamtoli, Baghgona and Shafiullah ghata Rohingya camp area of Rohingya camp no. 15 under Palongkhali union, Ward-5 of Ukhiya Upazila. •They are very much concerned with improvement of this respective DRP camp-based bazar. •Lack of proper and strong establishments in this targeted location; sellers are using temporary structures in case of presence situations. • No existing pre-drainage conditions in this bazar. • Different types are scattered here and there- not present in cluster. • Bazar connecting road is so narrow that consumers are facing a gathering situation and can't pass easily. In case of emergency conditions such as ambulance services cannot reach these locations. • No water bodies, forests and hills will be affected in case of improving existing bazar. •Possible dust and noise pollution during the construction works. •Safety of children and adults at the sites during construction works. •Elephant movement is not present. •Participating community people wish to have a better internal drainage system with appropriate disposal point for the market. •The participants have expressed their greater interest for this intervention and believe this will bring nothing but prosperity for the entire catchment dwellers.	• DRP and Local people considered that the selected site is suitable for the improvement of this hat-bazar from both the technical and socio-environmental (Local businessmen, farmers and DRP people can market their products and crops in these Hat-Bazar, customers can purchase all their daily requirements at one place, putrescible waste material and unhygienic condition will be managed by construction of drainage, toilet and waste management facilities) points of view. It will provide better mobility to services in all time. •Participants are optimizing for improving the proposed bazar with permanent manner so that sellers and consumers are feeling satisfactions to get services. •Construction site safety should be ensured to avoid any mishaps or accidents during work periods. •They also requested to involve the local community to construction work and they will welcome any outside key labor. •During construction period, alternate nearest bazar to usage for getting services wherever available. •Women should be given equal priority for job engagement, and their safety should be ensured throughout the engagement period. •Participants have ascertained that the selected site is free from

Sl. No.	Component's name under W-1	Issues raised and discussed	Recommendations and Comments
		• No trees should be harmed for improvement of this bazar • Available pathway to usher material delivering vehicles • Labor shed could be arranged in the target location • Identification of material storage location based on consultation with DRP and local communities**.**	any events related to resettlement and major 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. • Since there are available open spaces alongside the bazar, these can be used as labor shed and material storage site.
2.	Tajnimarkhola Kanthaltola (Rohingya Camp based Bazar)	• Proposed Hat-Bazar is situated within the catchment area of Burmapara, Thainkhali and Tajnimarkhola Rohingya camp area of Rohingya camp no. 13, Block-D under Palongkhali union, Ward-4 of Ukhiya Upazila. •They are very much concerned with improvement of this respective DRP camp-based bazar. •Lack of proper and strong establishments in this targeted location and sellers are using temporary structures in current situation. • No existing enough drainage services in this bazar. • Different types of shops are scattered here and there; same types of shops are not in one location. • Bazar connecting road is so narrow that consumers are facing a gathering situation and not passes easily. In case of emergency conditions such as ambulance services cannot reach these locations. •No water bodies, forests and hills will not be affected because of improving the existing bazar. •Possible dust and noise pollution during the construction works. •Safety of children and adults at the sites during construction works. •Elephant movement is not present. • Participating community people wish to have a better internal drainage system with appropriate disposal point for the market. •The participants have expressed their greater interest for this intervention and believe this will bring nothing but prosperity for the entire catchment dwellers. • No trees should be harmed for improvement of this bazar	• DRP and Local people considered that the selected site is suitable for the construction of this hat-bazar from both the technical and socio-environmental (Local businessmen, farmers and DRP people can market their products and crops in these Hat-Bazar. Customers can purchase all their daily requirements at one place, putrescible waste material and unhygienic condition will be managed by construction of drainage, toilet and waste management facilities) points of view. It will provide better mobility to services in all time. •Participants are optimizing for improving the proposed bazar with permanent manner so that sellers and consumers are feeling satisfactions to get services. •Construction site safety should be ensured to avoid any mishaps or accidents during work periods. •They also requested to involve the local community to construction work and they will welcome any outside key labor. •During construction period, alternate nearest bazar to usage for getting services where are available. •Women should be given equal priority for job engagement, and their safety should be ensured throughout the engagement period. • Participants have ascertained that the selected site is free from any events related to resettlement and major environmental impacts. The adverse environmental impacts that may come in the

Sl. No.	Component's name under W-1	Issues raised and discussed	Recommendations and Comments
		• Available pathway to usher material delivering vehicles • Labor shed availability in the target location • Identification of material storage location based on consultation with DRP and local communities**.**	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. • Since there are available open spaces alongside the bazar, these can be used as labor shed and material storage site.
3.	Moynarghona (Rohingya Camp based Bazar)	• Proposed Moynarghona Rohingya Camp based Hat-Bazar is situated within the catchment area of Moynarghona Rohingya camp area of Rohingya camp no. 11, Block-C6 & C7 under Palongkhali union, Ward-4 of Ukhiya Upazila. •They are very much concerned with improvement of this respective DRP camp-based bazar. •Lack of proper and strong establishments in this targeted location; sellers are using temporary structures in case of presence situations. • No existing enough pre-drainage conditions in this bazar. • Different types of shops are scattered here and there; same types of shops are not in one location. • Bazar connecting road is so narrow that consumers are facing a gathering situation and not passes easily. In case of emergency conditions such as ambulance services cannot reach these locations. • No water bodies, forests and hills will not be affected because of improving the existing bazar. •Possible dust and noise pollution during the construction works. •Safety of children and adults at the sites during construction works. •Elephant movement is not present. • Participating community people wish to have a better internal drainage system with appropriate disposal point for the market. •The participants have expressed their greater interest for this intervention and believe this will bring nothing but prosperity for the entire catchment dwellers. • No trees should be harmed for improvement of this bazar • Available pathway to usher material delivering vehicles • Labor shed availability in the target location	• DRP and Local people considered that the selected site is suitable for the construction of this hat-bazar from both the technical and socio-environmental (Local businessmen, farmers and DRP people can market their products and crops in these Hat-Bazar. Customers can purchase all their daily requirements at one place, putrescible waste material and unhygienic condition will be managed by construction of drainage, toilet and waste management facilities) points of view. It will provide better mobility to services in all time. •participants are optimizing for improving the proposed bazar with permanent manner so that sellers and consumers are feeling satisfactions to get services. •Construction site safety should be ensured to avoid any mishaps or accidents during work periods. •They also requested to involve the local community to construction work and they will welcome any outside key labor. •During construction period, alternate nearest bazar to usage for getting services where are available. •Women should be given equal priority for job engagement, and their safety should be ensured throughout the engagement period. • Participants have ascertained that the selected site is free from any events related to resettlement and major 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

Sl. No.	Component's name under W-1	Issues raised and discussed	Recommendations and Comments
		• Identification of material storage location based on consultation with DRP and local communities**.**	proper management/conservative options should be adopted. • Since there are available open spaces alongside the bazar, these can be used as labor shed and material storage site.
4.	Kutupalong Noukarmath (Rohingya Camp based Bazar)	• Proposed Kutupalong Noukarmath Rohingya Camp based Hat-Bazar is situated within the catchment area of DRP of Camp-7, 6 & 2E of Rohingya camp no. 7 under Palongkhali union, Ward-1 of Ukhiya Upazila. •They are very much concerned with improvement of this respective DRP camp-based bazar. •Lack of proper and strong establishments in this targeted location; sellers are using temporary structures in case of presence situations. • No existing enough pre-drainage conditions in this bazar. • Different types of shops are scattered here and there; same types of shops are not in one location. • Bazar connecting road is so narrow that consumers are facing a gathering situation and not passes easily. In case of emergency conditions such as ambulance services cannot reach these locations. • No water bodies, forests and hills will not be affected because of improving the existing bazar. •Possible dust and noise pollution during the construction works. •Safety of children and adults at the sites during construction works. •Elephant movement is not present. • Participating community people wish to have a better internal drainage system with appropriate disposal point for the market. •The participants have expressed their greater interest for this intervention and believe this will bring nothing but prosperity for the entire catchment dwellers. • No trees should be harmed for improvement of this bazar • Available pathway to usher material delivering vehicles • Labor shed availability in the target location • Identification of material storage location based on consultation with DRP and local communities**.**	• DRP and Local people considered that the selected site is suitable for the construction of this hat-bazar from both the technical and socio-environmental (Local businessmen, farmers and DRP people can market their products and crops in these Hat-Bazar. Customers can purchase all their daily requirements at one place putrescible waste material and unhygienic condition will be managed by construction of drainage, toilet and waste management facilities) points of view. It will provide better mobility to services in all time. •participants are optimizing for improving the proposed bazar with permanent manner so that sellers and consumers are feeling satisfactions to get services. •Construction site safety should be ensured to avoid any mishaps or accidents during work periods. •They also requested to involve the local community to construction work and they will welcome any outside key labor. •During construction period, alternate nearest bazar to usage for getting services where are available. •Women should be given equal priority for job engagement, and their safety should be ensured throughout the engagement period. • Participants have ascertained that the selected site is free from any events related to resettlement and major 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. • Since there are available open spaces alongside the bazar, these

Sl. No.	Component's name under W-1	Issues raised and discussed	Recommendations and Comments
			can be used as labor shed and material storage site.
5.	Lambashia (Rohingya Camp based Bazar)	• Proposed Lambashia Rohingya Camp based Hat-Bazar is situated within the catchment area of Kutupalong, Lambashia & Modhuchorra Rohingya camp area of Rohingya camp no. 1E under Rajapalong union, Ward-9 of Ukhiya Upazila. •They are very much concerned with improvement of this respective DRP camp-based bazar. •Lack of proper and strong establishments in this targeted location; sellers are using temporary structures in case of presence situations. • No existing enough pre-drainage conditions in this bazar. • Different types of shops are scattered here and there; same types of shops are not in one location. • Bazar connecting road is so narrow that consumers are facing a gathering situation and not passes easily. In case of emergency conditions such as ambulance services cannot reach these locations. • No water bodies, forests and hills will not be affected because of improving the existing bazar. •Possible dust and noise pollution during the construction works. •Safety of children and adults at the sites during construction works. •Elephant movement is not present. • Participating community people wish to have a better internal drainage system with appropriate disposal point for the market. •The participants have expressed their greater interest for this intervention and believe this will bring nothing but prosperity for the entire catchment dwellers. • No trees should be harmed for improvement of this bazar • Available pathway to usher material delivering vehicles • Labor shed availability in the target location • Identification of material storage location based on consultation with DRP and local communities**.**	• DRP and Local people considered that the selected site is suitable for the construction of this hat-bazar from both the technical and socio-environmental (Local businessmen, farmers and DRP people can market their products and crops in these Hat-Bazar. Customers can purchase all their daily requirements at one place, putrescible waste material and unhygienic condition will be managed by construction of drainage, toilet and waste management facilities) points of view. It will provide better mobility to services in all time. •participants are optimizing for improving the proposed bazar with permanent manner so that sellers and consumers are feeling satisfactions to get services. •Construction site safety should be ensured to avoid any mishaps or accidents during work periods. •They also requested to involve the local community to construction work and they will welcome any outside key labor. •During construction period, alternate nearest bazar to usage for getting services where are available. •Women should be given equal priority for job engagement, and their safety should be ensured throughout the engagement period. • Participants have ascertained that the selected site is free from any events related to resettlement and major 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. • Since there are available open spaces alongside the bazar, these can be used as labor shed and material storage site.

Sl. No.	Component's name under W-1	Issues raised and discussed	Recommendations and Comments
6.	Muchra Uthni (Rohingya Camp based Bazar)	• Proposed Hat-Bazar is situated within the catchment area of Muchra uthni Rohingya camp area of Rohingya camp no. 5 under Rajapalong union, Ward-9 of Ukhiya Upazila. •They are very much concerned with improvement of this respective DRP camp-based bazar. •Lack of proper and strong establishments in this targeted location. Sellers are using temporary structures in current situation. • Different types of shops are scattered here and there; same types of shops are not in one location. • Bazar connecting road is so narrow that consumers are facing a gathering situation and not passes easily. In case of emergency conditions such as ambulance services cannot reach these locations. • No water bodies, forests and hills will not be affected because of improving the existing bazar. •Possible dust and noise pollution during the construction works. •Safety of children and adults at the sites during construction works. •Elephant movement is not present. • Participating community people wish to have a better internal drainage system with appropriate disposal point for the market. • No trees should be harmed for improvement of this bazar • Available pathway to usher material delivering vehicles • Labor shed availability in the target location • Identification of material storage location based on consultation with DRP and local communities**.**	• DRP and Local people considered that the selected site is suitable for the construction of this hat-bazar from both the technical and socio-environmental (Local businessmen, farmers and DRP people can market their products and crops in these Hat-Bazar. Customers can purchase all their daily requirements at one place, putrescible waste material and unhygienic condition will be managed by construction of drainage, toilet and waste management facilities) points of view. It will provide better mobility to services in all time. •Construction site safety should be ensured to avoid any mishaps or accidents during work periods. •They also requested to involve the local community to construction work and they will welcome any outside key labor. •During construction period, alternate nearest bazar to usage for getting services where are available. •Women should be given equal priority for job engagement, and their safety should be ensured throughout the engagement period. • Participants have ascertained that the selected site is free from any events related to resettlement and major 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. • Since there are available open spaces alongside the bazar, these can be used as labor shed and material storage site.

Table 2.3.2: Consultation Meetings Summary

Road Package Number	*Date DD-MM-YYYY*	*Venue*	*Main Participant Groups*	*No. of Participants*	*Remarks (If any)*
W1-1	09-10-2020	Shop of Samsul Alom at Jamtoli-Baghgona	Representatives of different agencies (CiC, Site management, UP, NGOs, etc), DRP, local stakeholders etc.	10	N/A
W1-2	13-10-2020	Md. Sikandar's shop, Kanthaltola Bazar	Ó	18	N/A
W1-3	13-10-2020	Riadh store at Moynarghona Bazar	Ó	11	N/A
W1-4	11-10-2020	CiC office and Kutupalong Noukarmath Bazar at Camp-7	Ó	15	N/A
W1-5	13-10-2020	Lambashia Char Rastar More	Ó	7	N/A
W1-6	13-10-2020	Md. Shafiul Islam's shop, Muchra uthni bazar	Ó	13	N/A

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 within half a kilometer of the radial distance around the site. 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, socio-economic and environmental impacts of the proposed sub-project sites and the influence area in regards to the implementation measures, an extensive field visit was carried out in each proposed sub-project PIA. Environmental Screening form, as adopted in **Appendix-3** of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents. The screening data and information for each sub-project under this work package and details screening summary have been formulated and shown in **Appendix-3 under Section D.**

3.2 Major Findings

A complete view of current environmental conditions of individual sub-projects in relation to interested queries has been congregated in order to understand the degree of impacts corresponding with marked interventions. Interestingly, most sub-projects have correspondence with its surrounding features and uphold interchangeable impacts. However, the degree is not an interchangeable factor since scale is not parallel to each of these components where mitigation measure differentiation is implied. There are some cases where unique circumstances have been met with while environmental screening took place which is also accounted for and should be a matter of concern for other parts of the ESMF initiative.

In principle, all 6 hat-bazars are located in such strategic places inside the camps, where not only the DRP communities are harnessing the utmost benefits from; local people also are joining for the same. These places are already popular for shopping or selling the daily necessities and becoming centers for trading in those particular areas, though in informal and unorganized manner. LGED's interventions to improve the sites in an organized and sustaining manner and with optimum facilities both for the traders and consumers will be a dauntless effort to escalate the socio-economic benefits of the all participating parties/stakeholders. As all the markets/hats will be positioned in a designated part of the same wide existing areas of the current trading places which are in general free from any important or sensitive social or environmental features and even the construction works will not harm any socio-cultural, economic or environmental features significantly, Contractor will not face any significant burden in implementing the package. The extent of interventions will be very simple and less mechanical, so further degradation of environment is not anticipated. However, occupational health and safety, special care to the contractor's personnel and labor forces due to COVID situation, small scale preventive and enhancement works to the environment are the key concerns to be deployed by the contractor(s). Trees won't need to be removed or destroyed; rather plantation during the post-construction period has been included in the design and cost-estimation.

Labor shed will be equipped with necessary facilities including water supply, sanitation and first aid management, though it is more likely that local labors will be deployed in the package works.

Operation and regular maintenance of hat-bazar is certainly a key challenge for Bazar Management Committee or whoever will be in charge after the construction. Congregation of a huge number of people in a typical hat/bazar day will make the water & sanitation, hygiene, general environment, and traffic condition too hard and complex to manage efficiently. Therefore, deploying a number of people for managing the entire system in regular basis is a must to follow.

However, the significant issues observed in each sub-project are enlisted in following Table 3.2.1 with pertaining impacts. Moreover, impacts that are adventitious have also been embraced for promoting best practices.

Table 3.2.1: Environmental issues relating to each proposed components and respective influence areas.

Sl. No.	Component's name under W-1	Findings in regards to environmental concerns	Relevant Impacts
1.	Jamtali Shafiullah ghata (Rohingya Camp based Bazar)	It is not located within any major environmentally sensitive area.	It will not cause any severe negative effects to the environmental settings of the area neither to important environmental features.
		Construction period will induce air pollution while loading-unloading of construction materials. Impacts on air quality during the construction phase may turn to negative. The main impacts include dust generation from crushers, vehicles and the transportation of all types of construction materials.	It will invite waste production which may in turn cause minor air pollution due to deposited dust and airborne particles less than PM_{10}. Dust pollution may slightly suffocate photosynthesis however this can be minimized through regular water sprinkling as suggested in ESMP.
		No agriculture, fish farming and significant vegetation coverage is placed in the proposed location nor does it stand over such items. Nonetheless hills and homestead gardens/forest are found beside the existing hat-bazar.	No agriculture land or any forest coverage will get degraded or lost for construction. Liquid waste such as left-over oils or chemicals might run into these adjacent features.
		Elephant Movement is not present in the vicinity of the subproject location.	No impact is expected.
		No heavy earth excavation work will be involved.	No impact is anticipated.
		Construction related activities and setting up of labor camps along with associated facilities and their management.	Noise pollution from construction activities, air pollution caused by dust or gaseous emissions from vehicle movement, running of motorized equipment and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place.
		Chemical spills or improper disposal of construction waste materials due to lack of worker training and misconduct of contractor's safety initiatives.	During the construction period, soil may get contaminated from activities such as handling of hazardous construction materials (such as fuel, lubricants, paints, and solid waste and sewage).
		Vibration effects generated from mixing, pilling, drilling or other construction works	Any vibration would result in nuisance effects to nearby faunal species, but will be localized and temporary and will unlikely to result in structural damages to buildings or walls of the adjacent private properties.
		It is not located within any major environmentally sensitive area.	It will not cause any severe negative effects to the environmental settings of the area neither to important environmental features.

Sl. No.	Component's name under W-1	Findings in regards to environmental concerns	Relevant Impacts
2.	Tajnimarkhola Kanthaltola (Rohingya Camp based Bazar)	Construction period will induce air pollution while preparing for bitumen and loading-unloading raw materials. Impacts on air quality during the construction phase may turn to negative. The main impacts include dust generation from crushers, vehicles and the transportation of all types of construction materials.	It will invite waste production which may in turn cause minor air pollution due to deposited dust and airborne particles less than PM_{10}. Dust pollution may slightly suffocate photosynthesis however this can be minimized through regular water sprinkling as suggested in ESMP.
		Noise emission from construction machineries and equipment can cause nuisance to local residents and workers.	The ambient noise level might have potential to increase temporarily and intermittently in the close vicinity of active construction fronts.
		Construction works will involve chemical usage and preparation of on-site add-ons to the road. Generating scraps and residues.	The runoff from work site may enter existing pond and frustrate the water quality which will be acute however.
		Elephant Movement is not present in the vicinity of the subproject location.	No impact is expected here
		No heavy earth excavation work will be involved.	No associated impact is expected.
		Construction related activities and setting up of labor camps along with associated facilities and their management can cause adverse impacts.	Noise pollution from pilling or drilling, air pollution caused by dust or gaseous emissions from vehicle movement, running of motorized equipment and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place.
		Chemical spills or improper disposal of construction waste materials due to lack of worker training and misconduct of contractor's safety initiatives.	During the construction period, soil may get contaminated from activities such as handling of hazardous construction materials (such as fuel, lubricants, paints, and solid waste and sewage).
		Vibration effects generated from mixing, pilling, drilling or other construction works	Any vibration would result in nuisance effects to nearby faunal species, and but will be localized and temporary and will unlikely to result in structural damages to buildings or walls of the adjacent private properties.
		It is not located within any major environmentally sensitive area.	It will not cause any severe negative effects to the environmental settings of the area neither to important environmental features.
		Construction period will induce air pollution while preparing for bitumen and loading-unloading raw materials. Impacts on air quality during the construction phase may turn to negative. The main impacts include dust generation from crushers, vehicles and the	It will invite waste production which may in turn cause minor air pollution due to deposited dust and airborne particles less than PM_{10}. Dust pollution may slightly suffocate photosynthesis however this can be minimized through regular water sprinkling as suggested in ESMP.

Sl. No.	Component's name under W-1	Findings in regards to environmental concerns	Relevant Impacts
3.	Moynarghona (Rohingya Camp based Bazar)	transportation of all types of construction materials.	
		Construction works will involve chemical usage and preparation of on-site add-ons, and generate scraps and residues.	The runoff from work site may enter existing pond and frustrate the water quality which will be acute however.
		Moderate amounts of bush (sapling) clearings may need cutting.	Low amount of damage to habitats might occur. It can be managed by introducing small plantation incentives around the proposed location.
		Elephant Movement is not present in the vicinity of the subproject location.	No impact is expected
		Construction related activities and setting up of labor camps along with associated facilities and their management can cause adverse impacts.	Noise pollution from pilling or drilling, air pollution caused by dust or gaseous emissions from vehicle movement, running of motorized equipment and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Both Solid and Liquid waste will be produced.
		Chemical spills or improper disposal of construction waste materials due to lack of worker training and misconduct of contractor's safety initiatives.	During the construction period, soil may get contaminated from activities such as handling of hazardous construction materials (such as fuel, lubricants, paints, and solid waste and sewage).
		Vibration effects generated from pilling, drilling or other construction works	Any vibration would result in nuisance effects to nearby faunal species, and but will be localized and temporary and will unlikely to result in structural damages to buildings or walls of the adjacent private properties.
		It is not located within any major environmentally sensitive area.	It will not cause any severe negative effects to the environmental settings of the area neither to important environmental features.
		Construction period will induce air pollution while preparing for bitumen and loading-unloading raw materials. Impacts on air quality during the construction phase may turn to negative. The main impacts include dust generation from crushers, vehicles and the transportation of all types of construction materials.	It will invite waste production which may in turn cause minor air pollution due to deposited dust and airborne particles less than PM_{10}. Dust pollution may slightly suffocate photosynthesis however this can be minimized through regular water sprinkling as suggested in ESMP.
		Noise emission from construction machineries and equipment can cause nuisance to local residents and workers.	The ambient noise level might have potential to increase temporarily and intermittently in the close vicinity of active construction fronts.

Sl. No.	Component's name under W-1	Findings in regards to environmental concerns	Relevant Impacts
4.	Kutupalong Noukarmath (Rohingya Camp based Bazar)	Construction works will involve chemical usage and preparation of on-site add-ons and generate scraps and residues.	The runoff from work site may enter existing pond and frustrate the water quality which will be acute however.
		Vibration effects generated from pilling, drilling or other construction works	Any vibration would result in nuisance effects to nearby faunal species, and but will be localized and temporary and will unlikely to result in structural damages to buildings or walls of the adjacent private properties.
		Construction related activities and setting up of labor camps along with associated facilities and their management can cause adverse impacts.	Noise pollution from pilling or drilling, air pollution caused by dust or gaseous emissions from vehicle movement, running of motorized equipment and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Both Solid and Liquid waste will be produced.
		Elephant Movement is not present in the vicinity of the subproject location.	No impact is expected
		Chemical spills or improper disposal of construction waste materials due to lack of worker training and misconduct of contractor's safety initiatives.	During the construction period, soil may get contaminated from activities such as handling of hazardous construction materials (such as fuel, lubricants, paints, and solid waste and sewage).
5.	Lambashia (Rohingya	It is not located within any major environmentally sensitive area.	It will not cause any severe negative effects to the environmental settings of the area neither to important environmental features.
		Construction period will induce air pollution while preparing for bitumen and loading-unloading raw materials. Impacts on air quality during the construction phase may turn to negative. The main impacts include dust generation from crushers, vehicles and the transportation of all types of construction materials.	It will invite waste production which may in turn cause minor air pollution due to deposited dust and airborne particles less than PM_{10}. Dust pollution may slightly suffocate photosynthesis however this can be minimized through regular water sprinkling as suggested in ESMP.
		Noise emission from construction machineries and equipment can cause nuisance to local residents and workers.	The ambient noise level might have potential to increase temporarily and intermittently in the close vicinity of active construction fronts.
		Construction works will involve chemical usage and preparation of on-site add-ons and generate scraps and residues.	The runoff from work site may enter existing pond and frustrate the water quality which will be acute however.
		Elephant Movement is not present in the vicinity of the subproject	No impact is anticipated.

Sl. No.	Component's name under W-1	Findings in regards to environmental concerns	Relevant Impacts
	Camp based Bazar)	location.	
		No heavy earth excavation work will be involved, but little excavation may require.	Consequently air, noise and dust pollution will be occurred within a small-scale during construction period only.
		Construction related activities and setting up of labor camps along with associated facilities and their management can cause adverse impacts.	Noise pollution from pilling or drilling, air pollution caused by dust or gaseous emissions from vehicle movement, running of motorized equipment and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place.
		Chemical spills or improper disposal of construction waste materials due to lack of worker training and misconduct of contractor's safety initiatives.	During the construction period, soil may get contaminated from activities such as handling of hazardous construction materials (such as fuel, lubricants, paints, and solid waste and sewage).
		Vibration effects generated from pilling, drilling or other construction works	Any vibration would result in nuisance effects to nearby faunal species, and but will be localized and temporary and will unlikely to result in structural damages to buildings or walls of the adjacent private properties.
6.	Muchra Uthni	It is not located within any major environmentally sensitive area.	It will not cause any severe negative effects to the environmental settings of the area neither to important environmental features.
		Construction period will induce air pollution while preparing for bitumen and loading-unloading raw materials. Impacts on air quality during the construction phase may turn to negative. The main impacts include dust generation from crushers, vehicles and the transportation of all types of construction materials.	It will invite waste production which may in turn cause minor air pollution due to deposited dust and airborne particles less than PM_{10}. Dust pollution may slightly suffocate photosynthesis however this can be minimized through regular water sprinkling as suggested in ESMP.
		Noise emission from construction machineries and equipment can cause nuisance to local residents and workers.	The ambient noise level might have potential to increase temporarily and intermittently in the close vicinity of active construction fronts.
		Construction works will involve chemical usage and preparation of on-site add-ons to the road. Generating scraps and residues.	The runoff from work site may enter existing pond and frustrate the water quality which will be acute however.
		Elephant Movement is not present	No impact is expected
		No heavy earth excavation work will be involved; little excavation for placing the market platforms is required.	Consequently air, noise and dust pollution will be occurred within a small-scale during construction period only.

Sl. No.	Component's name under W-1	Findings in regards to environmental concerns	Relevant Impacts
	(Rohingya Camp based Bazar)	Construction related activities and setting up of labor camps along with associated facilities and their management can cause adverse impacts.	Noise pollution from pilling or drilling, air pollution caused by dust or gaseous emissions from vehicle movement, running of motorized equipment and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place.
		Vibration effects generated from pilling, drilling or other construction works	Any vibration would result in nuisance effects to nearby faunal species, and but will be localized and temporary and will unlikely to result in structural damages to buildings or walls of the adjacent private properties.
		Chemical spills or improper disposal of construction waste materials due to lack of worker training and misconduct of contractor's safety initiatives. Vibration effects generated from pilling, drilling or other construction works	During the construction period, soil may get contaminated from activities such as handling of hazardous construction materials (such as fuel, lubricants, paints, and solid waste and sewage).

Apart from the above mentioned points of concern, a few incidents of human elephant conflict were reported in 2018 and 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 zero, any recurrence would be managed by the ERTs and they will be called if there appears any minute possibility to recur. A map of elephant movement is given in Appendix-6.

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 Bank[3] 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[4] 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.

In this case, it is possible that a stationary position of the freshwater-saltwater transition zone can be established via proper management of pumping in the confined aquifer. The groundwater

[3] https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf
[4] "Implications of Climate Change for Fresh Groundwater Resources in Coastal Aquifers in Bangladesh", World Bank report.2010

resource is seen to suffer more from the climate change impact. The impact on groundwater due to climate change impact include

- Sea-level rise could result in a transgression of the sea and a loss of land area. This could also lead to the secondary effect of population migration in the new coastal band due to migration of the coastal population from the encroaching sea, thereby increasing domestic water needs in the new coastal area.

- A higher sea-surface elevation would change the base level for all groundwater gradients in the basin. In many aquifers, this would lead to shifts in local hydraulic gradients, inland hydraulic heads, and the rate of groundwater flow.

- A higher sea level will result in an increase in pressure in the subsea aquifer, resulting in inland movement of saltwater (aquifer seawater intrusion).

- Transgression of the coast implies that saline storm surges of 1 or more meters depth would penetrate beyond the new coast to new land areas. Storm surges transport saline water far inland of the coast and much of this floodwater may infiltrate the ground in areas where the aquifer is not fully saturated. Even where the aquifer is saturated, denser saline water may sink into the aquifer during the flood and later from pools of saltwater that remain following the flood.

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.

Site specific climate change impacts are often not so easy to measure or deduce plausibly while the site is confined to a narrow strip of roadways, and associated mitigation or offsetting measures are really hard to plot on the impact areas, though an overall set of measures are often considered in practical aspect. Fig: 3.3.2.1 shows the inundation risk map of the subprojects under W-1, none of the Roads are in vicinity of the severe river flood inundation area. So the risk of flooding is low around the sub-project area. Groundwater Depletion has been reported by the host community.

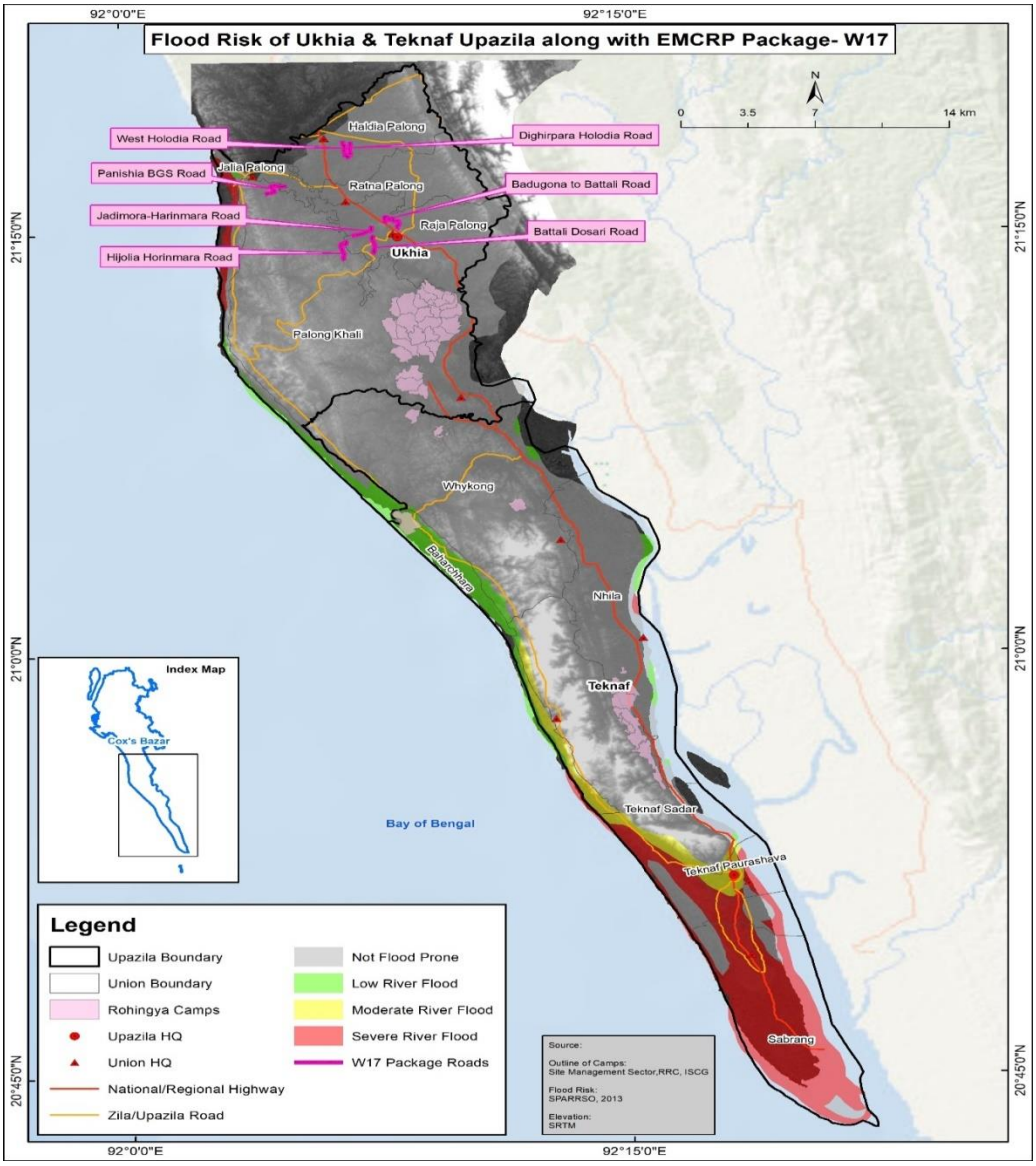

Figure 3.3.2.1: Flood inundation risk map near the subprojects (Road)

Also, in order to avoid the devastation caused by the thunderstorm, state-of the-art thunder arrester (lightning protection system) has been suggested to install having a coverage area of 25,434 sq.m for a single arrester. In addition, tree planation within the premises of hat-bazars is also suggested to sooth the temperature effect and increase the water retaining capacity of soil, at the same time.

4. ENVIRONMENTAL AND SOCIAL PROTECTION/SAFEGUARDS

4.1 Mitigation and Management Measures

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.

Table 4.1.1 Component Specific Impact and Mitigation Plan under package W01

Sl.	Component's name under W-17	Nearest Features to Receive Potential Impacts	Mitigation plan
1)	Jamtali Shafiullah ghata (Rohingya Camp based Bazar)	Comprehensive health care center (5m), Rohingya camp-15 (50m) to the north, Rohingya camp-15 (100m) to the south, Jamtoli Jame mosque (150m), graveyard (150m) to the east and Rohingya camp-15, Jamtoli camp mosque (200m), Brac site office (300m) to the west.	All these nearest features might get affected during the construction period with the generated debris and dust, though for the time being. Moreover, strict construction site management system- including best practice debris management procedure, restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, safe storage of materials, etc. will be practiced throughout the construction period. Further, stakeholders staying in nearby places shall be consulted regularly regarding any potential issues that may create nuisance to them, and their suggestions/concerns will be taken into account in on-site decision making and relevant working procedure.
2)	Tajnimarkhola Kanthaltola (Rohingya Camp based Bazar) .	DRP settlements (30m), shops (20m), camp mosque (100m) to the north, DRP settlements (50m), shops (20m), and camp mosque (200m) to the south, PHD Hospital (50m), shops (10m) to the east and IOM Hospital (200m), DRP settlements (100m), Camp mosque (100m) to the west.	
3)	Moynarghona (Rohingya Camp based Bazar)	Abu Dajjal mosque (30m), community center (100m), pond (10m), to the north, a community center (100m) to the south. A mosque (100m) to the east and a Police camp (50m) and Social forest (200m) to the west.	
4)	Kutupalong Noukarmath (Rohingya Camp based Bazar)	Abujar Gaffari mosque (10m), DRP settlements (15m) to the north, DRP Settlements (8m) to the south. Block-G graveyard, DRP settlements (100m) to the east and DRP settlements (10m) and Mukti Learning Center (100m) to the west.	
5)	Lambashia (Rohingya Camp based Bazar)	Shops (5m), Homestead forest (7m), DRP settlements (10m) to the north, Shops (5m), Mosjid A Belal (50m), Social forest (15m) to the south, Shops (10m), DRP settlements (8m), Mosque (20m) to the east and Shops (8m), Baytur Nagar jame mosque (30m), DRP settlements (8m) to the west.	
6)	Muchra Uthni (Rohingya Camp based Bazar)	Shops (5m), Muchra bazar mosque (10m), DRP settlements (15m) to the north. FH Hospital (40m), Female market (10m), Mosque (30m), WFP Food distribution center (30m), DRP settlements (20m) to the south, DRP settlements (10m) to the east and DRP settlements (10m), a Khal (110 m), mosque (200m) to the west.	

There are some impacts which would be realized or apprehended during the operational period of the markets/bazars. Setting toilets to an inappropriate place or condition may pose serious disturbances to the users as well as the people living nearby. Similarly, the outlet of internal drainage system should be emptied preferably to a collection sewer (main sewer) or any depression (collection lagoon) sufficiently away from a settlement area. Both these issues are to be carefully considered during the pre-construction or design phase. However, degree and extent of impacts,

whether social or environmental, during the operational phase are wider than the construction period which will largely be managed by the Bazar Management Committee.

Specific Environmental and Social Management Plan (ESMP) has been prepared to eliminate, reduce or regulate the adverse impacts for this subproject. The purpose of this plan is to formulate measures which will mitigate the adverse impacts on various environmental components, and protect environmental resources and enhance the value of environmental and social components where possible. Additional social management measures beyond the scope of environmental and social measures delineated in this document are perceived and suggested by the Social Safeguards team in their Social Screening Reports.

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 communities. Once the construction work is over, the Hat-Bazar will be handed over to the LGED/BMC. During that post-construction period, all regular maintenance works of the Hat-Bazar and its parts, repairing of non-functional tools and instruments, and other small rehabilitation works are the responsibilities of BMC. Bigger maintenance or rehabilitation works will be carried out by the LGED (under any relevant project/Program) – whichever organization government wants to engage for that particular works. The subproject specific environmental and social management plan has been outlined in Appendix-4. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

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&S, 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 offices.

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-5.**

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, a set of items are included in the BOQ of this sub-project. Additional sum of money for deploying a Safeguard Personnel for upholding all Environmental and Social Management works under the Work Package-W1 has also been added in the BOQ. The total costing and estimation have included several enhancement works such as Grass turfing, Tree plantation initiatives, Dust Suppression mechanisms, etc. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, drinking water facility with water tests, Temporary latrine for both male and female as well as waste disposal systems have 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 below and the detailed estimated cost to implement the ESMP is shown in **Appendix-5**.

Table 4.3.1: Summary of estimated bill of quantity

Road Package Number	Components' Name	Environmental Enhancement works estimated amount (BDT)	H&S measures for COVID Situation (BDT)
W1-1	Jamtali Shafiullah ghata (Rohingya Camp based Bazar)	162,645.72	94,150.00
W1-2	Tajnimarkhola Kanthaltola (Rohingya Camp	182,645.72	94,150.00

Road Package Number	Components' Name	Environmental Enhancement works estimated amount (BDT)	H&S measures for COVID Situation (BDT)
	based Bazar)		
W1-3	Moynarghona (Rohingya Camp based Bazar)	162,645.72	94,150.00
W1-4	Kutupalong Noukarmath (Rohingya Camp based Bazar)	182,645.72	94,150.00
W1-5	Lambashia (Rohingya Camp based Bazar)	162,645.72	94,150.00
W1-6	Muchra Uthni (Rohingya Camp based Bazar)	177,645.72	94,150.00
Total		**1,030,874.32**	**564,900.00**
Sub-Total (Enhancement works & H&S COVID BOQ) (BDT)		**1,595,774.32**	
One Safeguards Personnel for six sites (BDT)		**420,000.00**	
Grand Total (BDT)		**2,015,774.32**	

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 measures 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 situation 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. LIMITATION 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. CONCLUSION 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 conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved Hat-Bazars.
- 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 Hat-Bazar area, with large-growing trees at the periphery of the site will give the places a more natural and aesthetic 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 having better access to consumable goods and services, developing 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, and strengthen the capacity of Bazar Management Committee to run the establishment successfully in future.

Appendix-1: Attendance of consultation meetings for sub-projects

Jamtoli Shafiullah Ghata (Rohingya Camp Based Bazar)
EMCRP/W1.1

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

সময়: 11:00 AM তারিখ: ০৯/১০/২০২০ইং

উপ-প্রকল্প/কম্পোনেন্ট এর নাম: জামতলী শফিউল্লাহ কাটা বাজার

মত বিনিময় স্থান: জামতলী-বাঘঘোনা আমজাদ আব্দুল্লাহর দোকান

ইউনিয়ন: পালংখালী ওয়ার্ড নং: ০৫ গ্রাম: বালুখালী উপজেলা: উখিয়া জেলা: কক্সবাজার

সাব প্যাকেজ নং: EMCRP/W1(1)

অংশগ্রহণকারীদের তালিকা (পরিচয় ও স্বাক্ষর)

ক্রম নং	নাম	বয়স	পুরুষ/নারী	গ্রাম	স্বাক্ষর / টিপসই
০১।	মো: বাদশা মিয়া	৭৮	পুরুষ	জামতলী বাজার	বাদশা
০২।	মো: আহম্মদ উল্লাহ	৬৪	"	"	আহমদ হোসেন
০৩।	আমির হোসেন	৬২	"	জামতলী বাজার	[signature]
০৪।	আব্দুল আলম 01858390567	৪৫		" (মাঝি)	[signature]
০৫।	মোস্তাফিজুর রহমান	২০	"	" DRP	[signature]
০৬।	মো: ফারুক	৬৫	"	" "	[signature]
০৭।	মোঃ মজিবুর রহমান	৪০	"	" "	[signature]
০৮।	মো: সফিউল্লাহ	৬৫	"	" "	[signature]
০৯।	মো: আকবর	৬৮	"	DRP	[signature]
১০।	মো: কবির	৪২	"	"	[signature]

Figure: Attendance of consultation meeting for W1-1

Tanjimarkhola Kanthaltola (Rohingya Camp Based Bazar)

EMCRP/W1.2

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)
Consultation Participants List

Time: 12:30 ………………… Date 29.10.20

Subject: Tajnimarkhola kanthaltola Rohingya Camp based Bazar improvement

Consultation/FGD with.. Host / DRP ………………

ইমার্জেন্সি মাল্টি সেক্টর রোহিঙ্গা ক্রাইসিস রেসপন্স প্রোজেক্ট (ই এম সি আর পি)

প্রকল্পের নাম: Tanjimarkhola kanthaltola (Rohingya Camp Based Bazar) Sub-Package: EMCRP/W1(2)

মত বিনিময়ের স্থান: Mr. Sikandar's shop, Kanthaltola Bazar

ওয়ার্ড নং:
ইউনিয়ন: Palongkhali
মৌজা: Balukhali
উপজেলা: Ukhiya
জেলা: Cox's Bazar

অংশগ্রহণকারীদের তালিকা (পরিচয় ও স্বাক্ষর)

ক্রমিক নং	নাম	বয়স	পেশা	পুরুষ/নারী	গ্রাম	মোবাইল	স্বাক্ষর
১.	[illegible]	৬৬	[illegible]	পু:	[illegible]	[illegible]	[illegible]
২	[illegible]	98	–	পু:	Camp 13	DRP	[illegible]
৩.	[illegible]	৬৫	–	”	”	”	[illegible]
৪.	[illegible]	৪৫	ব্যবসা	”	”	”	Abdur
৫	[illegible]	৬৫	–	”	”	”	[illegible]
৬	[illegible]	৬০	ব্যবসা	”	”	”	[illegible]
৭	[illegible]	৬২	ব্যবসা	”	”	”	[illegible]
৮	[illegible]	২৫	ব্যবসা	”	”	”	[illegible]
৯.	[illegible]	২৪	”	”	”	”	[illegible]
১০.	[illegible]	28	[illegible]	”	[illegible]	Host	[illegible]
১১.	[illegible]	৬৪	”	”	”	”	[illegible]
১২.	[illegible]	[illegible]	”	”	[illegible]	”	[illegible]
১৩	[illegible]	29	”	”	”	”	[illegible]
১৪.	আবদুর রহিম	৩২	”	”	”	”	আবদুর রহিম
১৫.	[illegible]	26	”	”	”	”	[illegible]
১৬	[illegible]	29	”	”	”	”	[illegible]
১৭	[illegible]	৬৪	”	”	”	”	[illegible]
১৮	নাসির উদ্দিন	৬২	”	”	”	”	নাসির উদ্দিন

Figure: Attendance of consultation meeting for W1-2

Moynarghona (Rohingya Camp Based Bazar)
EMCRP/W1.3

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)
Consultation Participants List

Time: 12.15 PM Date 13/10/2020

Subject: Moynarghona Rohingya Camp based Market Improvement

Consultation/FGD with Host Community and DRP

Moynarghona (Rohingya Camp Based Bazar)
Sub. Package: EMCRP/W1/(3)
Moynarghona Bazar/Riyadh Block - C5-C6 Street)

ক্রমিক নং	নাম	বয়স	পেশা	পুরুষ/মহিলা	ঠিকানা	যোগাযোগ	স্বাক্ষর
০১	মোঃ তাহিম হোসেন	২৮	ব্যবসা	পুরুষ	আমতলী - ১১	—	
০২	মোঃ রফিকুর	৬৮	কৃষি শ্রমিক	″	″	—	
০৩	মোঃ হাবিবুর	৪৮	কৃষি শ্রমিক	″	″	—	
০৪	মোঃ ইদরিস	২০	ব্যবসা	″	আমতলী-১২	—	
০৫	মোঃ তাহের	২১	″	″	আমতলী - ১২	—	
০৬	মোঃ ফিরোজ	২০	″	″	আমতলী - ১১	—	
০৭	মুক্তার আলম	২১	″	″	আমতলী - ১১	—	
০৮	মোঃ হোসেন	৫০		″	″	—	
০৯	মোঃ শহিদ	৬৮	কৃষি শ্রমিক	″	আমতলী - ১১	—	
১০	মোঃ আবুল কাশেম	২৫	ব্যবসা	″	আমতলী - ১১	—	
১১	মোঃ রহমান	২০	ব্যবসা	″	আমতলী - ১১	—	
১২	মোঃ আবু তাহের	৪২	আমতলী পৌরসভা	″	আমতলী পৌরসভা - ২	—	

Figure: Attendance of consultation meeting for W1-3

Kutupalong Noukarmath (Rohingya Camp Based Bazar)
EMCRP/W1.4

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)
Consultation Participants List

Time: ১২:30 PM..... Date: ২২/১২/২০২০

Subject: kutupalong Noukarmath Camp based Bazar improvement

Consultation/FGD with..... DRP

ইমার্জেন্সি মাল্টি সেক্টর রোহিঙ্গা ক্রাইসিস রেসপন্স প্রোজেক্ট (ই এম সি আর পি)

প্রকল্পের নাম: Kutupalong Noukarmath (Rohingya Camp Based Bazar) Sub-Package: EMCRP/W1.4)

যে বিষয়ের স্থান: Kutupalong Noukarmath Bazar, Camp-7, Block-F

কোড নং:
ইউনিয়ন: Palonkhali
উপজেলা: Balukhali
জেলা: Ukhiya
Cox's Bazar

অংশগ্রহণকারীদের তালিকা (পরিচয় ও স্বাক্ষর)

ক্রমিক নং	নাম	বয়স	পেশা	শিক্ষাগত যোগ্যতা	ঠিকানা	মোবাইল	স্বাক্ষর
০১	মোঃ [illegible]	৩৮	[illegible]	৪র্থ	Camp-2	০	[illegible]
০২	মোঃ [illegible]	২০	CPP-V	11	Camp-7		
০৩	মোঃ [illegible]	৩৫	11	11	11		
০৪	মোঃ [illegible]	৩৮	CPP	11	Camp-7		
০৫	মোঃ [illegible]	৩৭	11	11	11		
০৬	[illegible]	৫০	[illegible]	11	11		
০৭	মো: [illegible]	৩৪	[illegible]	৯	Camp-2		
০৮	মোঃ [illegible]	৩৮	[illegible]	11	Camp-7		
০৯	[illegible]	৩৫	DRP	11	Camp-6		
১০	মোঃ [illegible]	৩১	DRCV	11	Camp-6		
১১	মোঃ [illegible]	২৪	DRC-V	11	Camp-2		
১২	মোঃ [illegible]	২৮	[illegible]	11	Camp-2		

Kutupalong Noukarmath (Rohingya Camp Based Bazar)
EMCRP/W1.4

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)
Consultation Participants List

Time: 12:00 pm Date: 11.10.2020

Subject: Kutupalong Noukarmath Camp based Bazar improvement

Consultation/FGD with: CIC

ইমার্জেন্সি মাল্টি সেক্টর রোহিঙ্গা ক্রাইসিস রেসপন্স প্রোজেক্ট (ই এম সি আর পি)

প্রকল্পের নাম: Kutupalong Noukarmath (Rohingya Camp Based Bazar) Sub-Package: EMCRP/W1(4)

মত বিনিময়ের স্থান: CIC office, Camp-7

কোড নং:
ইউনিয়ন: Palongkhali
ডাকঘর: Balukhali
উপজেলা: Ukhiya
জেলা: Cox's Bazar

অংশগ্রহণকারীদের তালিকা (পরিচয় ও স্বাক্ষর)

ক্রমিক নং	নাম	বয়স	পেশা	পুরুষ/নারী	গ্রাম	মোবাইল	স্বাক্ষর
01.	Md. Nazmul Hoque Sumon		CIC	Male	Camp-07	01847-466809	[illegible]
02.	MD. Wahidul Islam		CMO	"	Camp-07	01847426409	Wahid
03	Subhash Chandra		ATL	"	Camp-07	01847-455816	[illegible]

Figure: Attendance of consultation meeting for W1-4

Lambashia (Rohingya Camp Based Bazar)
EMCRP/W1.5

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)
Consultation Participants List

Time: 04 P.M Date. 13/10/2020

Subject: Lambashia Rohingya Camp based Bazar Improvement

Consultation/FGD with Host Community and DRP

ইমার্জেন্সি মাল্টি সেক্টর রোহিঙ্গা ক্রাইসিস রেসপন্স প্রোজেক্ট (ই এম সি আর পি)

প্রকল্পের নাম: Lambashia (Rohingya Camp Based Bazar) Pkg. Package: EMCRP/W1(5)
সভা অনুষ্ঠানের স্থান: Lambashia Char Rastar Moar

[illegible]: Rajapalong
ডাকঘর: Ukhiya 4750
উপজেলা: Ukhiya
জেলা: Cox's Bazar

অংশগ্রহণকারীদের হাজিরা (পরিচয় ও স্বাক্ষর)

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
01	[illegible]	66	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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03	মো: [illegible]	26	[illegible]	"	"	–	[illegible]
04	[illegible]	30	"	"	[illegible]	–	[illegible]
05	[illegible]	25	"	"	DRP	–	[illegible]
06	[illegible]	26	"	"	"	–	[illegible]
07	[illegible]	28	"	"	"	–	[illegible]

Figure: Attendance of consultation meeting for W1-5

Muchra Uthni (Rohingya Camp Based Bazar)
EMCRP/W1.6

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)
Consultation Participants List

Time: 8:00 (4:50) ..... Date: 26.10.20

Subject: Muchra Uthni Rohingya Camp based Bazar improvement

Consultation/FGD with ......DRP...............

ইমার্জেন্সি মাল্টি সেক্টর রোহিঙ্গা ক্রাইসিস রেসপন্স প্রোজেক্ট (ই এম সি আর পি)

প্রকল্পের নাম: Muchra Uthni (Rohingya Camp Based Bazar) Sub Package- EMCRP/W1 (6)
সভা অনুষ্ঠানের স্থান: Mr. Shafiqul Islam's Shop, Muchra Bazar

গ্রাম:
ইউনিয়ন: Rajapalong
ডাকঘর: Balukhali
উপজেলা: Ukhiya
জেলা: Cox's Bazar

অংশগ্রহণকারীদের তালিকা (পরিচয় ও স্বাক্ষর)

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১	Shafiq Leslam	৩৯	[illegible]	[illegible]	[illegible]	DRP	[signature]
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৮	[illegible]	৬০	"	"	"	"	[signature]
৯	[illegible]	[illegible]	"	"	"	"	[signature]
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১১	[illegible]	৫৫	"	"	"	"	[signature]
১২	[illegible]	২৫	"	"	"	"	[signature]

Figure: Attendance of consultation meeting for W1-6

Appendix-2: Pictures of sub-project location and surrounding features with public consultation

Rohingya camp connecting road within the proposed Hat-Bazar

Poultry shops on existing drain alongside of internal road

Existing drainage system & tin shed shops on the proposed location

Consultation meeting with local communities

Figures: Present condition of Jamtali Shafiullah ghata Rohingya Camp based Bazar (W1-1) & Public Consultation meeting with local community

Proposed location for improving of Hat-Bazar

Various shops on existing Hat-Bazar

Consultation meeting with local communities

Figures: Present condition of Tajnimarkhola Kanthaltola Rohingya Camp based Bazar (W1-2) & Public Consultation meeting with local community

Proposed location for improving Hat-Bazar

Existing various shops on proposed location

Chicken shop on the existing Hat-Bazar

Consultation meeting with local communities

Figures: Present condition of Moynarghona Rohingya Camp based Bazar (W1-3) & Public Consultation meeting with local community

Camp connecting road within the proposed Hat-Bazar

Vegetables shops on targeted location

Temporary tin & bamboo make shed for improving Hat-Bazar

Consultation meeting with local communities

Figures: Present condition of Kutupalong Noukarmath Rohingya Camp based Bazar (W1-4) & Public Consultation meeting with local community

Proposed improving site of targeted hat Bazar

Existing road on proposed site

Fish shops on existing Hat Bazar

Consultation meeting with local communities

Figures: Present condition of Lambashia Rohingya Camp based Bazar (W1-5) & Public Consultation meeting with local community

Main connecting Army road within the proposed location

Existing drain besides the existing Hat-Bazar

Various shops on the existing Hat-Bazar

Consultation meeting with local communities

Figures: Present condition of Muchra Uthni Rohingya Camp based Bazar (W1-6) & Public Consultation meeting with local community

Appendix-3: Environmental Screening Form for proposed sub-project components

Environmental Screening Form for Sub-project Component W1-1

Sub-Project Description Form:

EMCRP/W1- Improvement of 6 nos. Hat Bazar under Cox's Bazar Districts.

Name of Sub-Project: Jamtali Shafiullah ghata (Rohingya Camp based Hat-Bazar).

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

Estimated total cost of sub-project (in Taka): 300 Lac Tk.

Estimated construction period duration: 1 year

Estimated total cost of the component (in Taka): **50 Lac Tk.**

Estimated Operation and Maintenance period (life of sub-project): Project design life is more than 15 (Fifteen) years but Government policies will determine the period for sub-projects to operate in/near the camps.

District: Cox's Bazar **Sub-District**: Ukhiya **Union**: Palongkhali

Name of Community/Local Area: Jamtali, Baghgona, Shafiullah ghata

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.):

The Sub-Project is categorized as a DRP camp based hat-bazar. The key stakeholders or beneficiaries are the Displaced Rohingya People (DRP) but people from host communities are more likely to take part in trading activities as well. The proposed hat-bazar will be improved within a designated area on Govt. land with some pre-identified interventions.

The proposed interventions include construction of 01 no. Fish Shed (Dimension: 25'-0" x 15'-0"), 01 no. Meat Shed (Dimension: 25'-0" x 15'-0"), 01 to 02 nos. Multipurpose Shed (Dimension: 40'-0" x 15'-0"), 01 no. Women's Market (Dimension: 40'-0" x 15'-0"), 01 no. Open Sale Platform (Dimension: 40'-0" x 15'-0"), 02 nos. Toilet cum Urinal (Dimension: 15'-0" x 10'-0"; each), 02 to 03 nos. Tubewell (Dimension: 10'-0" x 10'-0"; each), and apart from these, Internal Road and Very Shallow depth surface drain (if and where required) will be added to interventions; Road safety work and Environmental Mitigation and Enhancement works are also included in the project activity.

The footprint area for a hat-bazar is at least 25% higher than the estimated land area for establishment, as the impact will surpass the boundary when the target component remains open for operation. Therefore, the estimated footprint / land area for this sub-project is 110,000 sq. feet.

Among natural resources to be used for this improvement works are soil (land area and bricks), water, wood, bamboos, sand and silt, primarily.

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.:

Proposed Hat-Bazar is situated within the catchment area of Jamtoli, Baghgona and Shafiullah ghata Rohingya camp area of Rohingya camp no. 15 under Palongkhali union, Ward-5 of Ukhiya Upazila.

This targeted Hat-Bazar is located outside of camp boundary. A 20 feet existing HBB road passing through the proposed location for the Hat-Bazar as well as connects the Rohingya camp 15. During the pick hour (from 9 am to 12 pm and from 2:30pm to 4:30 pm), this place remains very busy with the presence and activities of locals, stakeholders, different GO & NGOs officials, services providers and others. A comprehensive primary health care center is positioned at 5m to the north, agricultural land (20m), a mosque named Jamtoli Jame Mosque & a graveyard is located at 150m to the south side. Patches of vegetation containing large and matured trees on the south and north side are located within 200m radius of the sub-project. No Important environmental features are found within the sub-project. Existing tin shed and bamboo make structures will be replaced during the pre-construction period and the improved structures will be constructed there.

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. During the participatory public consultation meeting representatives from Sellers, consumers, host communities, DRP's, Bazar Management Committee (BMC), farmers, elders and other stakeholders attended and showed no objection to the improvement of this infrastructure on the proposed site. The public consultation meeting results confirmed that improvement of this hat-bazar will increase socio-economic interest in the communities and make trading system and living standard more comfortable to all these people.

The proposed Hat-Bazar is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any significant 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 improvement work is restricted within a designated area, no outside disturbing activity will be involved. Moreover, appropriate mitigation measures in all cases will be taken according to the ESMP for minimizing the air, dust and noise pollution.

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

During construction period solid waste will be generated due to construction activities. The types of wastes are brick chips, unused sand, wood, gravels etc. Negligible amount of plastic, fuel etc. will be generated in equipment/stack yards. Human wastes will be generated in labor camp, if local labors are not used inside the camp areas. Dust and noise (primarily the hustle and bustle of human congregation) are among the nuisance that may generate during the operation phase.

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. Sensitive environmental, cultural, archaeological, religious sites within 1 kilometer of site include Comprehensive health care center (5m), Thaingkhali Bazar mosque (1km), Chiconchorra khal (1km), Rohingya camp-15 (50m), Tahingkhali Bazar (1km), Palongkhali UP (1km), Thaingkhali GPS (1km) to the north, Baghgona mosque (300m), Rohingya camp-15 (100m), Camp-15 CiC office (500m) to the south, Jamtoli Jame mosque (150m), graveyard (150m), Ukhiya-Teknaf highway (500m), Jamtoli station (500m), Jamtoli hill (600m) to the east and Rohingya camp-15, Jamtoli camp mosque (200m), Brac site office (300m), Fish farm (400m) to the west. Apart from these structures no other sensitive sites exist.

In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration routes were about 2-3 km away from this sub-project. No disturbance is anticipated due to construction activities to those social and environmental components.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions: The proposed interventions include construction of 01 no. Fish Shed (Dimension: 25'-0" x 15'-0"), 01 no. Meat Shed (Dimension: 25'-0" x 15'-0"), 01 to 02 nos. Multipurpose Shed (Dimension: 40'-0" x 15'-0"), 01 no. Women's Market (Dimension: 40'-0" x 15'-0"), 01 no. Open Sale Platform (Dimension: 40'-0" x 15'-0"), 02 nos. Toilet cum Urinal (Dimension: 15'-0" x 10'-0"; each), 02 to 03 nos. Tubewell (Dimension: 10'-0" x 10'-0"; each), and apart from these, Internal Road and Very Shallow depth surface drain (if and where required) will be added to interventions; Road safety work and Environmental Mitigation and Enhancement works are also included in the project activity.
Sub-project Location: The sub-project area is located in Palongkhali Union, Ward-5 under Ukhiya Upazila of Cox's Bazar district and the geographical positioning is at $21^0$09'36" N and $92^0$08'55" E. The distance from the Upazila headquarter is about 15 km. Nearby major road is Ukhiya-Teknaf highway, which is connected to the proposed site with a 20 ft. wide HBB road. **Land ownership** The land is owned by the Government of Bangladesh.
Expected construction period: 1 Year
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: The improvement works will take place on a land area of 4600 sq.ft, and the influence area will cover the entire footprint area in respect to the existing settings of the said component. The area houses different socio-economic, environmental, cultural and religious features and institutions, such as Comprehensive health care center (5m), Thaingkhali Bazar mosque (1km), Chiconchorra khal (1km), Rohingya camp-15 (50m), Tahingkhali Bazar (1km), Palongkhali UP (1km), Thaingkhali GPS (1km) to the north, Baghgona mosque (300m), Rohingya camp-15 (100m), Camp-15 CiC office (500m) to the south, Jamtoli Jame mosque (150m), graveyard (150m), Ukhiya-Teknaf highway (500m), Jamtoli station (500m), Jamtoli hill (600m) to the east and Rohingya camp-15, Jamtoli camp mosque (200m), Brac site office (300m), Fish farm (400m) to the west. Within the influence area of the subproject no historical sites were identified. Also, there is no evidence of elephant movement close to the subproject location.

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:

Thaingkhali Bazar mosque (1km), Chiconchorra khal (1km), Tahingkhali Bazar (1km), Thaingkhali GPS (1km) to the north, Baghgona mosque (300m), Camp-15 CiC office (500m) to the south, Jamtoli Jame mosque (150m), graveyard (150m), Jamtoli station (500m), Jamtoli hill (600m) to the east and Jamtoli camp mosque (200m), Brac site office (300m), Fish farm (400m) to the west. There are no other sensitive environmental, cultural, archaeological sites within the catchment area of this sub-project.

A sketch of the project surrounding area with several features at relatively distant places and locations of sensitive institutions in the project surrounding areas are shown in figure B.1.1

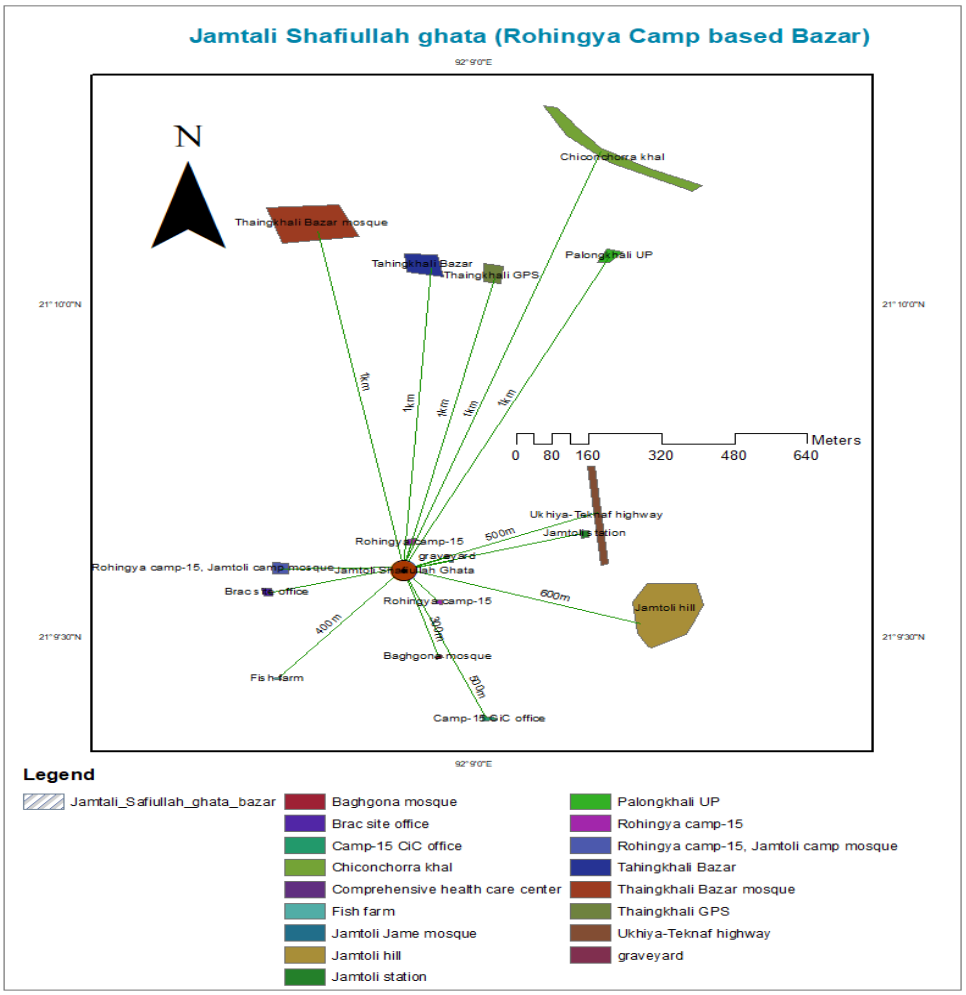

Figure B.1.1: A sketch of the project intervention area

Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive features found in the footprint area, except some matured vegetation in the surrounding areas of the Hat-Bazar which are primarily homestead/backyard gardens or social forest. These will not be affected by the construction works, as the activities will be carried out within the existing subproject boundary and necessary preventive

and mitigation measures will be followed during the entire construction period.

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

No. Elephant migration routes or corridors were present near the sub-project area about 8-9 years ago, but no presence of elephants or their migration routes at this moment. This information is confirmed with maps established by UNHCR/IUCN and the consultation meeting with local stakeholders.

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

N/A (This activity will be confined within the existing subproject boundary)

(3) Other issues: N/A

*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 pedestrians. Natural air action, over the road surface which causes dust circulation.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as private car, tempo, auto rickshaw, etc. move on the road passing through the proposed site, throughout the day and night generating noise but within tolerable limit in most cases. Hustle and bustle among the people is a prominent but natural source of noise during a typical busy market day.

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):

Landslide potential is low. There is very low possibility of soil erosion or landslide during construction period of targeted sub-project. The impacts are negative but very small scale, mostly site-specific within a relatively small area and manageable by mitigation measures.

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

Groundwater is the main source of potable water in the Sub-project area. The shallow depth is about 60 feet to 70 feet and deep tube well depth is 700 to 800 feet. In the sub-project area, deep groundwater is fresh and potable and arsenic free. Water from the shallower aquifers contains medium concentration of iron. 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 been 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 north and south 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): An existing 20 ft HBB camp connecting road is available for access. It is also connected to Ukhiya-Teknaf highway. It is possible to carry the construction materials over the road to the proposed site.
Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction: An open space is required to set up a labor camp with associated facilities (toilet for male and female workers, kitchen for cooking, tube-well for water supply facility, and electricity connection) to support the workforce during construction. The space should have enough land area to accommodate a stack yard along with a site office, if possible. This open space should be selected in such a way that workers do not need to travel/walk through a longer distance to reach the site and the place can be secured with proper fencing with a guard be posted at the entrance. The space or land area can be used on rental basis or under a mutual agreement between the owner and the contractor. The contract/consent document must be kept at the site office, whatsoever the mode of the contract is.
Possible location of labor camps: Labor camp can be established beside the sub-project location since there are available open lands. However, this will have to be done with the consent of land owner 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) Bamboo & wood from mobilized materials viii) clay are the most common type of building materials used in construction works.
Identification of access road for transportation (Yes/No): Yes. A 20 ft HBB existing camp connecting road is available for access.
Location identification for raw material storage: Best option for raw material storage is any sufficiently available space next to the labor camp or the site office and away from steep slopes. However, this will need to arrange an open field and should be consulted with local communities. Material storage area must be well fenced and materials will be covered with tarpaulins.
Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.): Earth/ mud, plastics, brick chips, cement dusts, and dust from bricks can be found during pre-construction time which can be identified as solid wastes. Also, brick chips, cement, sand, bamboo stalks, remnants of tin and other leftover pre-construction materials can be found after the construction of labor camp, latrines and kitchen. Negligible amount of bio and non-biodegradable

Solid waste (incl. food waste, plastics, polythene, paper, etc.) may be produced from the use of working labors engaged in construction works of labor camp and associate facilities. Altogether amount of those produced wastes in a single day is nearly 30 kg during the pre-construction phase.
Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.): During the pre-construction period wastes will be generated from some preparatory activities, such as construction of labor camp, site office, material storage/stack yard and associated facilities, etc. and removal of road pavement. All these activities also will be carried out by numbers of local labors. So, around 35 kilograms of construction related wastes, such as bricks, aggregates, leftover cements, sands, etc. will be generated, which are typical solid wastes and a negligible quantity (nearly 5 kg) of bio and non-biodegradable wastes will be generated from the daily necessities of workers and construction staffs, such as food wastes, polythene, papers, plastics, etc. Some chemical waste, like paints, oils, etc. and small amount of solid and liquid wastes from the immediate use of constructed latrines by the workers may also be generated, such as feces and urines.
Type and quantity of raw materials used (wood, bricks, cement, water, etc.): **Raw materials:** i) Bricks ii) Sand iii) cement iv) Gravel v) water vi) Aggregates. **Quantity:** It is difficult to provide exact figures of raw materials on a typical pre-construction site at this level.
Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards: Vegetation from social forestry or backyard gardening is present in surrounding areas, but will not be harmed by the construction works in any way. No borrow pits were found in the area and the current condition shows that there is no aggregated soil in the peripheral surroundings.
Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors:(High/Medium/Low with explanation) The possibility is Low, for stagnant water bodies in borrow pits/quarries for inviting mosquito breeding ground.
Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description) Low, Two water bodies present within 1 km distance from the sub-project location- Chiconchorra khal (1 km) to the north and a fish pond (600m) to the west. But those will not be disturbed or modified during the pre-construction phase.
Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description) There is very little scope of damaging to terrestrial or aquatic ecosystems or endangered species by the activities carried out in this phase.
Activities that can lead to landslides, slumps, slips and other mass movements in road cuts: Only some preparatory physical works will be carried out in this phase which has very little scope to trigger landslide.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description) The scale of erosion of lands is very unlikely at this stage.
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: Air pollution from generating of dust while carrying and unloading the construction materials to the

site or stackyard may create public nuisance and little health effects for the people in the area. But noise and light pollution may not be at such a significant level.

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.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.): ***Solid waste:*** Residual waste from the labor camps will be generated. Wastes from equipment maintenance/vehicles on-site and scrap material will be generated during construction work, which are mostly solid wastes. Waste from civil works includes brick chips, leftover sands, construction debris, etc. And the overall quantity will be tentatively 35 kg daily. ***Liquid wastes:*** Leftover oils or spills from machineries may have a high probability to generate liquid waste. And the quantity can be tentatively 3 kg daily.
Type and quantity of raw materials used (wood, bricks, cement, water, etc.): **Type:** i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) wood 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: There is rarely vegetation immediately around the sub-project area and will not be affected by construction work. The open area beside the proposed location 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) The construction work will not involve digging any borrow pits, quarries, etc. which may develop stagnant water bodies encouraging mosquito or other disease vectors. Moreover, local communities have stated that they do not have severe troubles with mosquitos or other disease vectors.
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 nearby.
Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description) Low. The improvement works will be limited within a small area and not any considerable terrestrial or aquatic ecosystem is present in close vicinity, which could be affected significantly by the construction activities. Also, the area is not known for containing any endangered or threatened species of any kind.
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) Not applicable.
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: No traffic movement impacts on light but low effects of noise and air pollution, and will be managed by preventive measures, like water sprinkling twice a day, covered transport of materials and so on.

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: Dust produced in the proposed site for daily business activities will be minimal compared to the vehicle produced nuisance, and the effects can easily be managed by sprinkling water during the business days by the market management committee. Therefore, it's very unlikely that any significant health hazards or interference of plant growth will take place.
Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description) Soil cover in the market area will be destroyed during the operational period due to the congregation of a large number of people at any market/hat day and removal of grass cover therefore.
Possibility of odor and water, soil quality impacts from SWM and FSM disposal system (High/Medium/Low with description) Putrescible wastes and mismanagement relating to proper cleaning and maintenance of toilets and market sheds may cause odor and degradation of water and soil quality in or around the places, which could be avoided by active and efficient management by the BMC (Bazar Management Committee).
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: Apart from the financial engagement of labors, suppliers and other stakeholders during the construction period, a Hat-Bazar offers numerous multi-faceted benefits to the host and DRP communities. Communities will have easy access to all necessary and daily products on a single platform, producers and sellers can sell their products without any difficulties, and female shoppers and sellers will also receive advantageous and safe spaces for sopping and trading. Many other stakeholders involving in backend supply chain of the trading facilities will also be hugely benefited. Participating in the trading activities of all sorts thus will improve the economic conditions of every involved party and help them develop as well as gaining access to other support services for achieving a better living condition. Furthermore, the revenue to be generated, if any, from the hat-bazar will eventually contribute to the development of the respective areas.
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 found in the project intervention area, therefore, no such effect can be 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. There are no protected areas in or around 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 impact is anticipated.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation) Not applicable.
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: Improved hat-bazar will definitely increase the public gathering which causes the increasing of vehicular movement. This movement may increase the air and noise pollution, but light pollution effect will not be increased. The Bazar Management Committee should remain concerned about this nuisance and take necessary actions by spraying water to reduce the pollution generated from dust.

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)

Environmental Screening Form for Sub-project Component W1-2

Sub-Project Description Form:

EMCRP/W1- Improvement of 6 nos. Hat Bazar under Cox's Bazar Districts.

Name of Sub-Project: Tajnimarkhola Kanthaltola (Rohingya Camp based Hat-Bazar).

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

Estimated total cost of sub-project (in Taka): 300 Lac Tk.

Estimated construction period duration: 1 year

Estimated total cost of the component (in Taka): **50 Lac Tk.**

Estimated Operation and Maintenance period (life of sub-project): Project design life is more than 15 (Fifteen) years but Government policies will determine the period for sub-projects to operate in/near the camps.

District: Cox's Bazar **Sub-District**: Ukhiya **Union**: Palongkhali

Name of Community/Local Area: Burmapara, Thainkhali & Tajnimarkhola

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.):

The Sub-Project is categorized as a DRP camp based hat-bazar. The key stakeholders or beneficiaries are the Displaced Rohingya People (DRP) but people from host communities are more likely to take part in trading activities as well. The proposed hat-bazar will be improved within a designated area on Govt. land with some pre-identified interventions.

The proposed interventions include the construction of 01 no. Fish Shed (Dimension: 25'-0" x 15'-0"), 01 no. Meat Shed (Dimension: 25'-0" x 15'-0"), 01 to 02 nos. Multipurpose Shed (Dimension: 40'-0" x 15'-0"), 01 no. Women's Market (Dimension: 40'-0" x 15'-0"), 01 no. Open Sale Platform (Dimension: 40'-0" x 15'-0"), 02 nos. Toilet cum Urinal (Dimension: 15'-0" x 10'-0"; each), 02 to 03 nos. Tubewell (Dimension: 10'-0" x 10'-0"; each), and apart from these, Internal Road and Very Shallow depth surface drain (if and where required) will be added to interventions; Road safety work and Environmental Mitigation and Enhancement works are also included in the project activity.

The footprint area for a hat-bazar is at least 25% higher than the estimated land area for establishment, as the impact will surpass the boundary when the target component remains open for operation. Therefore, the estimated footprint / land area for this sub-project is 8,050 sq. feet.

Among natural resources to be used for this improvement works are soil (land area and bricks), water, wood, bamboos, sand and silt, primarily.

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.:

Proposed Hat-Bazar is situated within the catchment area of Burmapara, Thainkhali and Tajnimarkhola Rohingya camp area of Rohingya camp no. 13, Block-D under Palongkhali union, Ward-4 of Ukhiya Upazila. This targeted Hat-Bazar is inside a Rohingya camp boundary. There are no

establishments on this proposed location. This proposed camp-based Hat-Bazar is connected to an 18 feet existing HBB road named Thainkhali-Tasnimarkhola road. During the pick hour (from 9 am to 12 pm and from 2:30pm to 4:30 pm), this place remains very busy with locals, stakeholders, different GO & NGOs officials, services providers and others. PHD Hospital is positioned at 50m to the east and IOM Hospital is located at 200m to the west side. No Important environmental features are found within the sub-project. Existing tin shed and bamboo make structures will be replaced during pre-construction period and the improved structures will be constructed there.

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. During the participatory public consultation meeting representatives from Sellers, consumers, host communities, DRP's, Bazar Management Committee (BMC), farmers, elders and other stakeholders attended and showed no objection to the improvement of this infrastructure on the proposed site. The public consultation meeting results confirmed that improvement of this hat-bazar will increase socio-economic interest in the communities and make trading system and living standard more comfortable to all these people.

The proposed Hat-Bazar is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any significant 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 improvement work is restricted to a designated area, no outside disturbing activity will be involved. Moreover, mitigation measures will be taken according to the ESMP for minimizing the air, dust and noise pollution.

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

During construction period solid waste will be generated due to construction activities. The types of wastes are brick chips, unused sand, wood, gravels etc. Negligible amount of plastic, fuel etc. will be generated in equipment/stack yards. Human wastes will be generated in labor camp, if local labors are not used inside the camp areas. Dust and noise (primarily the hustle and bustle of human congregation) are among the nuisance that may generate during the operation phase.

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. Sensitive environmental, cultural, archaeological, religious sites within 1 kilometer of site include DRP settlements (30m), shops (20m), camp mosque (100m), camp-19 (1km) to the north, DRP settlements (50m), shops (20m), camp mosque (200m), Churakhola (500m) and brick field (200m) to the south, PHD Hospital (50m), shops (10m), mosque (300m), Gunarpara (500m) to the east and IOM Hospital (200m), DRP settlements (100m), Camp mosque (100m) to the west. Apart from these structures no other sensitive environmental, cultural, archaeological, religious sites exists.

In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration routes were about 1-2 km away from this sub-project. No disturbance is anticipated due to construction activities to those sub-project components.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions: The proposed hat-bazar will be improved within a designated area with some identified interventions, such as 01 no. Fish Shed (Dimension: 25'-0" x 15'-0"), 01 no. Meat Shed (Dimension: 25'-0" x 15'-0"), 01 to 02 nos. Multipurpose Shed (Dimension: 40'-0" x 15'-0"), 01 no. Women's Market (Dimension: 40'-0" x 15'-0"), 01 no. Open Sale Platform (Dimension: 40'-0" x 15'-0"), 02 nos. Toilet cum Urinal (Dimension: 15'-0" x 10'-0"; each), 02 to 03 nos. Tubewell (Dimension: 10'-0" x 10'-0"; each), and apart from these, Internal Road and Very Shallow depth surface drain (if and where required) will be added to interventions; Road safety work and Environmental Mitigation and Enhancement works are also included in the project activity.
Sub-project Location: The sub-project area is situated in Rohingya camp-13, Block-D of Palongkhali Union, Ward-4 under Ukhiya Upazila of Cox's Bazar district. The geographical positioning is at $21^0$10'42''N and $92^0$08'36''E. The distance from the Upazila headquarter is about 13 km. Nearby major road is Thainkhali-Telkhola road, which is connected to the proposed site with an 18 ft. wide HBB road. **Land ownership** The land is owned by the Government of Bangladesh.
Expected construction period: 1 Year
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: The improvement works will take place over a land area of 4600 sq.ft, and the influence area will cover the entire footprint area in respect to the existing settings of the said component. The area houses different socio-economic, environmental, cultural and religious features and institutions, such as DRP settlements (30m), shops (20m), camp mosque (100m), camp-19 (1km) to the north, DRP settlements (50m), shops (20m), camp mosque (200m), Churakhola (500m) and brick field (200m) to the south, PHD Hospital (50m), shops (10m), mosque (300m), Gunarpara (500m) to the east and IOM Hospital (200m), DRP settlements (100m), Camp mosque (100m) to the west. Within the influence area of the subproject no historical sites were identified. Also, there is no evidence of elephant movement close to subproject location.

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: There are four mosques located in four different directions from the proposed site, within 100 to 200m distance. Further sensitive sites include PHD Hospital (50m) to the east and IOM Hospital (200m) to the west, among the nearby features. There are no other sensitive environmental,

cultural, archaeological sites within the catchment area of this sub-project.

A sketch of the project surrounding area with several features at relatively distant places and locations of sensitive institutions in the project surrounding areas are shown in figure B.1.1

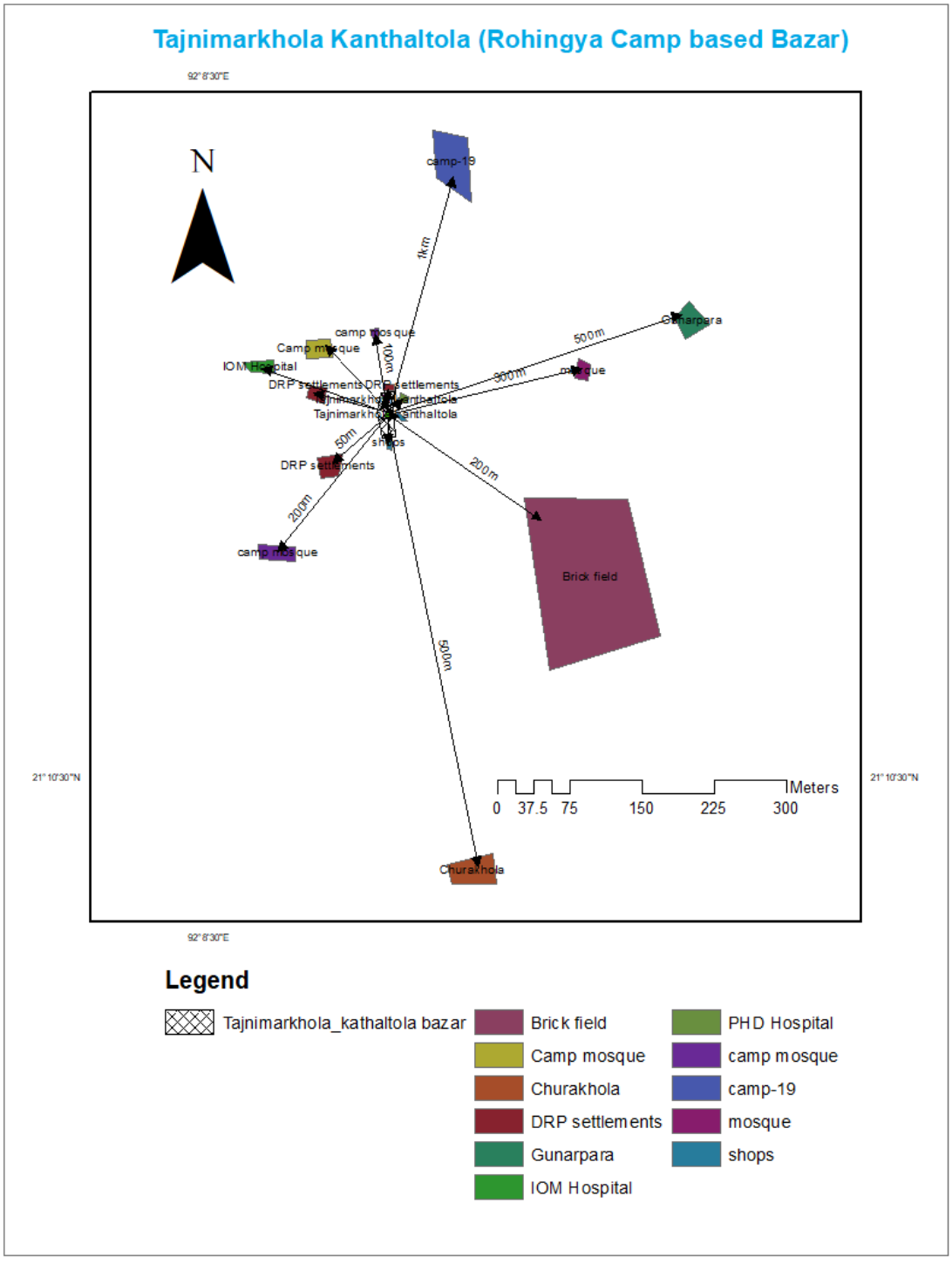

Figure B.1.1: A sketch of the project intervention area

Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive features found in the footprint area, except matured vegetation on the sides of the existing Hat-Bazar which are homestead gardens or social

forest. Several mosques, shops, learning center, food distribution centers and local settlements and DRP were found during the survey. It will not be affected by the construction works, as the activities will be carried out within the existing subproject boundary and necessary preventive and mitigation measures will be followed during the entire construction period.

(1) Within/near Elephant Migration Routes Yes/No*
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 confined within the existing subproject boundary)

(3) Other issues: N/A

*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 pedestrians. Natural air action, over the road surface which causes dust circulation.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as private car, tempo, auto rickshaw, etc. move on the road passing through the proposed site, throughout the day and night generating noise but within tolerable limit in most cases. Hustle and bustle among the people is a prominent but natural source of noise during a typical busy market day.

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):
Landslide potential is low. There is low possibility of soil erosion or landslide during construction period of targeted sub-project. The impacts are negative but very small scale, site-specific within a relatively small area and adjustable by mitigation measures.

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):
Groundwater is the main source of potable water in the Sub-project area. The shallow depth is about 60 feet to 70 feet and deep tube well depth is 700 to 800 feet. In the sub-project area, deep groundwater is fresh and potable and arsenic free. Water from the shallower aquifers contains medium concentration of iron. 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 been 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 in surrounding areas of the proposed subproject area are located within 2500m 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 existing 18 ft HBB camp connecting road is available for access. It is also connected to Thainkhali-Telkhola road. It is possible to carry the construction materials on the road to the improvement site.
Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction: An open space is required to set up a labor camp with associated facilities (toilet for male and female workers, kitchen for cooking, tube-well for water supply facility, and electricity connection) to support the workforce during construction. The space should have enough land area to accommodate a stack yard along with a site office, if possible. This open space should be selected in such a way that workers do not need to travel/walk through a longer distance to reach the site and the place can be secured with proper fencing with a guard be posted at the entrance. The space or land area can be used on rental basis or under a mutual agreement between the owner and the contractor. The contract/consent document must be kept at the site office, whatsoever the mode of the contract is.
Possible location of labor camps: Labor camp can be established beside the sub-project location since there are available open private lands. However, this will have to be done with the consent of land owner 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) Bamboo & wood from mobilized materials viii) clay are the most common type of building materials used in construction works.
Identification of access road for transportation (Yes/No): Yes. An 18 ft HBB existing camp connecting road is available for access.
Location identification for raw material storage: Best option for raw material storage is any sufficiently available space next to the labor camp or the site office and away from steep slopes. However, this will need to arrange an open field and should be consulted with local communities. Material storage area must be well fenced and materials will be covered with tarpaulins.
Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from

old latrines, etc.): Earth/ mud, plastics, brick chips, cement dusts, and dust from bricks can be found during pre-construction time which can be identified as solid wastes. Also, brick chips, cement, sand, bamboo stalks, remnants of tin and other leftover pre-construction materials can be found after the construction of labor camp, latrines and kitchen. Negligible amount of bio and non-biodegradable Solid waste (incl. food waste, plastics, polythene, paper, etc.) may be produced from the use of working labors engaged in construction works of labor camp and associate facilities. Altogether amount of those produced wastes in a single day is nearly 30 kg during the pre-construction phase.
Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.): During the pre-construction period wastes will be generated from some preparatory activities, such as construction of labor camp, site office, material storage/stack yard and associated facilities, etc. and removal of road pavement. All these activities also will be carried out by numbers of local labors. So, around 35 kilograms of construction related wastes, such as bricks, aggregates, leftover cements, sands, etc. will be generated, which are typical solid wastes and a negligible quantity (nearly 5 kg) of bio and non-biodegradable wastes will be generated from the daily necessities of workers and construction staffs, such as food wastes, polythene, papers, plastics, etc. Some chemical waste, like paints, oils, etc. and small amount of solid and liquid wastes from the immediate use of constructed latrines by the workers may also be generated, such as feces and urines.
Type and quantity of raw materials used (wood, bricks, cement, water, etc.): **Raw materials:** i) Bricks ii) Sand iii) cement iv) Gravel v) water vi) Aggregates. **Quantity:** It is difficult to provide exact figures of raw materials on a typical pre-construction site at this level.
Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards: Vegetation from social forestry or backyard gardening is present in surrounding areas, but will not be harmed by the construction works in any way. No borrow pits were found in the area and the current condition shows that there is no aggregated soil in the peripheral surroundings.
Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors:(High/Medium/Low with explanation) The possibility is Low, for stagnant water bodies in borrow pits/quarries for inviting mosquito breeding ground.
Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description) There are no existing drainage channels or surface water bodies in close vicinity of the proposed site.
Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description) There is very little scope of damaging to terrestrial ecosystems by the activities carried out in this phase. No information regarding the presence of any endangered species were found during the field survey.
Activities that can lead to landslides, slumps, slips and other mass movements in road cuts: Only some preparatory physical works will be carried out in this phase which has very little scope to trigger landslide.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description) The scale of erosion of lands is very unlikely at this stage.

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:
Air pollution from generating of dust while carrying and unloading the construction materials to the site or stackyard may create public nuisance and little health effects for the people in the area. But noise and light pollution may not be at such a significant level.

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.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):
Solid waste: Residual waste from the labor camps will be generated. Wastes from equipment maintenance/vehicles on-site and scrap material will be generated during construction work, which are mostly solid wastes. Waste from civil works includes brick chips, leftover sands, construction debris, etc. And the overall quantity will be tentatively 35 kg daily. ***Liquid wastes:*** Leftover oils or spills from machineries may have a high probability to generate liquid waste. And the quantity can be tentatively 3 kg daily.
Type and quantity of raw materials used (wood, bricks, cement, water, etc.):
Type: i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) wood 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:
There is rarely vegetation immediately around the sub-project area and will not be affected by construction work. The open area beside the proposed location 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)
The construction work will not involve digging any borrow pits, quarries, etc. which may develop stagnant water bodies encouraging mosquito or other disease vectors. Moreover, local communities have stated that they do not have severe troubles with mosquitos or other disease vectors.
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 in the vicinity.
Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)
Low. The improvement works will be limited within a small area and not any considerable terrestrial or aquatic ecosystem is present in close vicinity, which could be affected significantly by the construction activities. Also, the area is not known for containing any endangered or threatened species of any kind.
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) Not applicable.
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: No traffic movement impacts on light but low effects of noise and air pollution, and will be managed by preventive measures, like water sprinkling twice a day, covered transport of materials and so on.

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: Dust produced in the proposed site for daily business activities will be minimal compared to the vehicle produced nuisance, and the effects can easily be managed by sprinkling water during the business days by the market management committee. Therefore, it's very unlikely that any significant health hazards or interference of plant growth will take place.
Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description) Soil cover in the market area will be destroyed during the operational period due to the congregation of a large number of people at any market/hat day and removal of grass cover therefore.
Possibility of odor and water, soil quality impacts from SWM and FSM disposal system (High/Medium/Low with description) Putrescible wastes and mismanagement relating to proper cleaning and maintenance of toilets and market sheds may cause odor and degradation of water and soil quality in or around the places, which could be avoided by active and efficient management by the BMC (Bazar Management Committee).
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: Apart from the financial engagement of labors, suppliers and other stakeholders during the construction period, a Hat-Bazar offers numerous multi-faceted benefits to the host and DRP communities. Communities will have easy access to all necessary and daily products on a single platform, producers and sellers can sell their products without any difficulties, and female shoppers and sellers will also receive advantageous and safe spaces for sopping and trading. Many other stakeholders involving in backend supply chain of the trading facilities will also be hugely benefited. Participating in the trading activities of all sorts thus will improve the economic conditions of every involved party and help them develop as well as gaining access to other support services for achieving a better living condition. Furthermore, the revenue to be generated, if any, from the hat-bazar will eventually contribute to the development of the respective areas.

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 found in the project intervention area, therefore, no such effect can be 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. There are no protected areas in or around 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 impact is anticipated.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation) Not applicable.
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: Improved hat-bazar will definitely increase the public gathering which causes the increasing of vehicular movement. This movement may increase the air and noise pollution, but light pollution effect will not be increased. The Bazar Management Committee should remain concerned about this nuisance and take necessary actions by spraying water to reduce the pollution generated from dust.

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)

Environmental Screening Form for Sub-project Component W1-3

Sub-Project Description Form:

EMCRP/W1- Improvement of 6 nos. Hat Bazar under Cox's Bazar Districts.

Name of Sub-Project: Moynarghona (Rohingya Camp based Hat-Bazar).

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

Estimated total cost of sub-project (in Taka): 300 Lac Tk.

Estimated construction period duration: 1 year

Estimated total cost of the component (in Taka): **50 Lac Tk.**

Estimated Operation and Maintenance period (life of sub-project): Project design life is more than 15 (Fifteen) years but Government policies will determine the period for sub-projects to operate in/near the camps.

District: Cox's Bazar **Sub-District**: Ukhiya **Union**: Palongkhali

Name of Community/Local Area: Moynarghona (Rohingya camp-11)

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.):

The Sub-Project is categorized as a DRP camp based hat-bazar. The key stakeholders or beneficiaries are the Displaced Rohingya People (DRP) but people from host communities are more likely to take part in trading activities as well. The proposed hat-bazar will be improved within a designated area on Govt. land with some pre-identified interventions.

The proposed interventions include construction of 01 no. Fish Shed (Dimension: 25'-0" x 15'-0"), 01 no. Meat Shed (Dimension: 25'-0" x 15'-0"), 01 to 02 nos. Multipurpose Shed (Dimension: 40'-0" x 15'-0"), 01 no. Women's Market (Dimension: 40'-0" x 15'-0"), 01 no. Open Sale Platform (Dimension: 40'-0" x 15'-0"), 02 nos. Toilet cum Urinal (Dimension: 15'-0" x 10'-0"; each), 02 to 03 nos. Tubewell (Dimension: 10'-0" x 10'-0"; each), and apart from these, Internal Road and Very Shallow depth surface drain (if and where required) will be added to interventions; Road safety work and Environmental Mitigation and Enhancement works are also included in the project activity.

The footprint area for a hat-bazar is at least 25% higher than the estimated land area for establishment, as the impact will surpass the boundary when the target component remains open for operation. Therefore, estimated footprint / land area for this sub-project is 15,000 sq. feet.

Among natural resources to be used for this improvement works are soil (land area and bricks), water, wood, bamboos, sand and silt, primarily.

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.:

Proposed Moynarghona Rohingya Camp based Hat-Bazar is situated within the catchment area of Moynarghona Rohingya camp (camp no. 11), Block-C6 & C7 under Palongkhali union, Ward-4 of Ukhiya Upazila. This targeted Hat-Bazar is located inside the camp boundary. A 30 feet existing HBB road passing through the proposed Hat-Bazar as well as connect to the Army road at west side and Ukhiya-Teknaf highway at east side. During the pick hour (from 8:30 am to 12 pm and from 2:30pm

to 4:30 pm), this place remains very busy with locals, stakeholders, different GO & NGOs officials, service providers, and others.

A mosque named Abu Dajjal mosque (30m), a Community center (100m) and a pond (10m) are positioned at north side, a hill is positioned at 10m and a community center is at 100m to the south another mosque (100m) and Ukhiya-Teknaf Highway (100m) are located to the east and Army road (5m) and a Police camp (50m) are located on the west side. Patches of vegetation containing large and matured trees on the west side are located within 200m radius of the sub-project. No Important environmental features are found within the sub-project. Existing tin and bamboo made structures will be replaced during pre-construction period and the improved structures will be constructed there.

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. During the participatory public consultation meeting representatives from Sellers, consumers, host communities, DRP's, Bazar Management Committee (BMC), farmers, elders and other stakeholders attended and showed no objection to the improvement of this infrastructure on the proposed site. The public consultation meeting results confirmed that improvement of this hat-bazar will increase socio-economic interest in the communities and make trading system and living standard more comfortable to all these people.

The proposed Hat-Bazar is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any significant 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 improvement work is restricted within a designated area, no outside disturbing activity will be involved. Moreover, mitigation measures will be taken according to the ESMP for minimizing the air, dust and noise pollution.

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

During construction period solid waste will be generated due to construction activities. The types of wastes are brick chips, unused sand, wood, gravels etc. Negligible amount of plastic, fuel etc. will be generated in equipment/stack yards. Human wastes will be generated in labor camp, if local labors are not used inside the camp areas. Dust and noise (primarily the hustle and bustle of human congregation) are among the nuisance that may generate during the operation phase.

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. Sensitive environmental, cultural, archaeological, religious sites within 1 kilometer of site include Abu Dajjal mosque (30m), community center (100m), pond (10m) to the north, hill (10m), community center (100m), Camp 11 CiC office (500m) to the south, Mosque (100m), Ukhiya-Teknaf highway (100m) to the east and Army road (5m), Police camp (50m), Social forest (200m) and DRP camp-12 (700m) to the west. Apart from these structures no other sensitive environmental, cultural, archaeological, religious sites exist.

Shops, settlements and connecting roads are found around the sub-project area. No elephant migration routes exist (ref. IUCN) in the vicinity. Elephant migration routes were about 1-2 km away from this sub-project. No significant disturbance is anticipated due to construction activities to those social and environmental components.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions: The proposed interventions include construction of 01 no. Fish Shed (Dimension: 25'-0" x 15'-0"), 01 no. Meat Shed (Dimension: 25'-0" x 15'-0"), 01 to 02 nos. Multipurpose Shed (Dimension: 40'-0" x 15'-0"), 01 no. Women's Market (Dimension: 40'-0" x 15'-0"), 01 no. Open Sale Platform (Dimension: 40'-0" x 15'-0"), 02 nos. Toilet cum Urinal (Dimension: 15'-0" x 10'-0"; each), 02 to 03 nos. Tubewell (Dimension: 10'-0" x 10'-0"; each), and apart from these, Internal Road and Very Shallow depth surface drain (if and where required) will be added to interventions; Road safety work and Environmental Mitigation and Enhancement works are also included in the project activity.
Sub-project Location: The sub-project area is located in Rohingya camp-11, Block- C6 & C7 of Palongkhali Union, Ward-4 under Ukhiya Upazila, Cox's Bazar district and the geographical positioning is at $21^0$10'54''N and $92^0$09'14''E. The distance from the Upazila headquarter is about 11 km. Nearby major road is Ukhiya-Teknaf highway, which is connected to the proposed site with a 30 ft. wide HBB road. **Land ownership** The land is owned by the Government of Bangladesh.
Expected construction period: 1 Year
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: The improvement works will take place on a land area of 4600 sq.ft, and the influence area will cover the entire footprint area in respect to the existing settings of the said component. The area houses different socio-economic, environmental, cultural and religious features and institutions, such as Abu Dajjal mosque (30m), community center (100m), pond (10m) to the north, Block C-7 (100m), hill (10m), community center (100m), Camp 11 CiC office (500m) to the south, Mosque (100m), Block-6 (200m), Ukhiya-Teknaf highway (100m) to the east and Block-5 (10m), Army road (5m), Police camp (50m), Social forest (200m), DRP camp-12 (700m) to the west. Within the influence area of the subproject no historical sites were identified. Also, there is no evidence of elephant movement close to subproject location.

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:** Abu Dajjal mosque (30m), a community center (100m), a pond (10m) is located to the north of the

proposed site, Camp Block C-7 (100m), hill (10m), a community center (100m) and Camp 11 CiC office (500m) to the south, Mosque (100m), Block-6 (200m), Ukhiya-Teknaf highway (100m) to the east and Block-5 (10m), Army road (5m), Police camp (50m), Social forest (200m), DRP camp-12 (700m) to the west are also located. There are no other sensitive environmental, cultural, archaeological sites within the catchment area of this sub-project.

A sketch of the project surrounding area with several features at relatively distant places and locations of sensitive institutions in the project surrounding areas are shown in figure B.1.1.

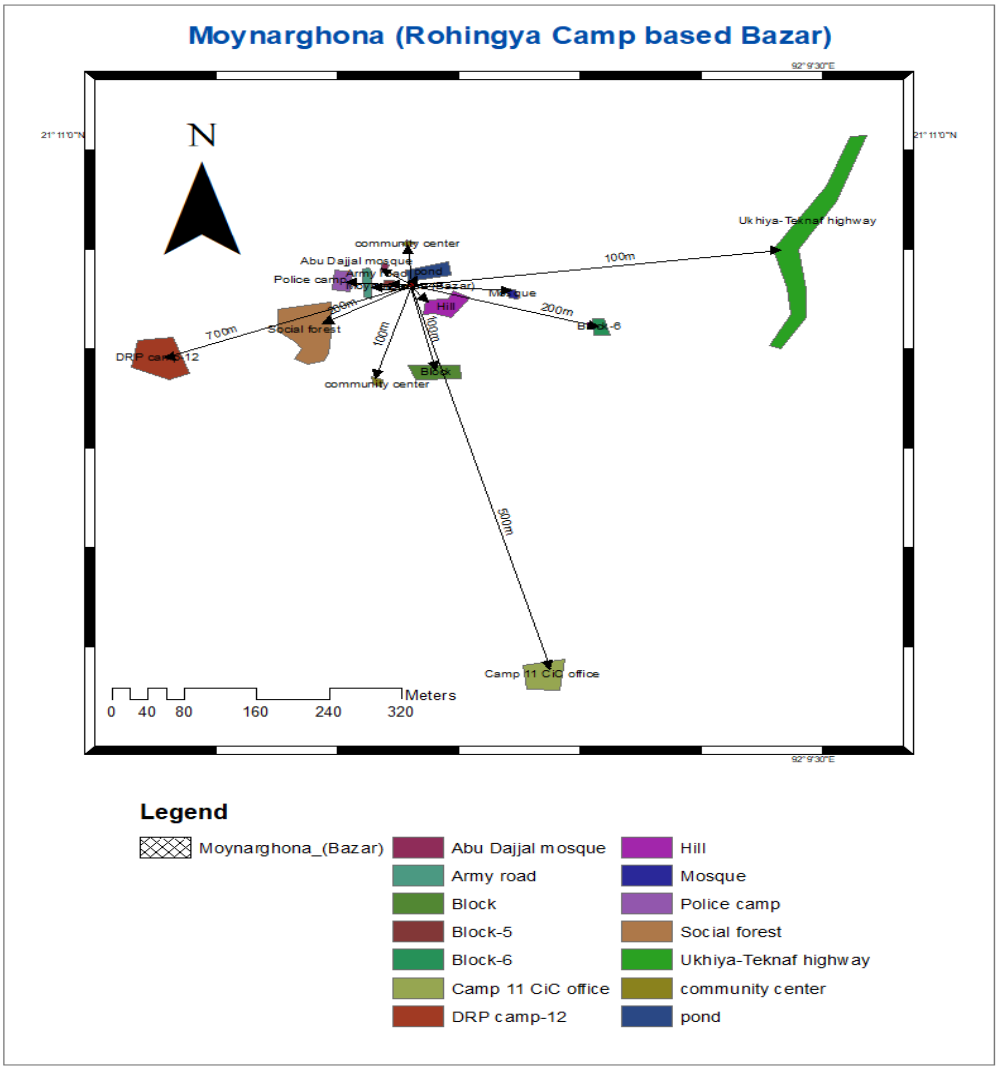

Figure B.1.1: A sketch of the project intervention area

Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive features found in the footprint area, except some matured vegetation to the west side of the existing Hat-Bazar which are homestead gardens or social forest, and a pond is located on the north of the proposed site. Those will not be affected by the construction works, as the activities will be carried out within the designated area in a controlled way and necessary preventive and mitigation measures will be followed during the entire construction period.

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

No. Elephant migration routes or corridors were present near the sub-project area about 4-5 years ago, but no presence of elephants or their migration routes at this moment. This information is confirmed with maps established by UNHCR/IUCN and the consultation meeting with local stakeholders.

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

N/A (This activity will be confined within the existing subproject boundary)

(3) Other issues: N/A

*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 pedestrians. Natural air action, over the road surface which causes dust circulation.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as private car, tempo, auto rickshaw, etc. move on the road passing through the proposed site, throughout the day and night generating noise but within tolerable limit in most cases. Hustle and bustle among the people is a prominent but natural source of noise during a typical busy market day.

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):

Landslide potential is low. There is very low possibility of soil erosion or landslide during construction period of targeted sub-project. The impacts are negative but very small scale, mostly site-specific within a relatively small area and manageable by mitigation measures.

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

Groundwater is the main source of potable water in the Sub-project area. The shallow depth is about 60 feet to 70 feet and deep tube well depth is 700 to 800 feet. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Water from the shallower aquifers contains medium concentration of iron. 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 been 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 west side of the proposed subproject area are located within 220m 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 existing 30 ft HBB IOM camp connecting road and Army road are available for access. These are also connected to Ukhiya-Teknaf highway. It is possible to carry the construction materials over these roads to the proposed site.
Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction: An open space is required to set up a labor camp with associated facilities (toilet for male and female workers, kitchen for cooking, tube-well for water supply facility, and electricity connection) to support the workforce during construction. The space should have enough land area to accommodate a stack yard along with a site office, if possible. This open space should be selected in such a way that workers do not need to travel/walk through a longer distance to reach the site and the place can be secured with proper fencing with a guard be posted at the entrance. The space or land area can be used on rental basis or under a mutual agreement between the owner and the contractor. The contract/consent document must be kept at the site office, whatsoever the mode of the contract is.
Possible location of labor camps: Labor camp can be established beside the road since there are available open Govt. /private lands. However, this will have to be done with the consent of land owner 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) Bamboo & wood from mobilized materials viii) clay are the most common type of building materials used in construction works.
Identification of access road for transportation (Yes/No): Yes. 30 ft HBB existing IOM camp connecting road and Army road are available for access.
Location identification for raw material storage: Best option for raw material storage is any sufficiently available space next to the labor camp or the site office and away from steep slopes. However, this will need to arrange an open field and should be consulted with local communities. Material storage area must be well fenced and materials will be covered with tarpaulins.
Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.): Earth/ mud, plastics, brick chips, cement dusts, and dust from bricks can be found during pre-construction time which can be identified as solid wastes. Also, brick chips, cement, sand, bamboo stalks, remnants of tin and other leftover pre-construction materials can be found after the construction of labor camp, latrines and kitchen. Negligible amount of bio and non-biodegradable Solid waste (incl. food waste, plastics, polythene, paper, etc.) may be produced from the use of working labors engaged in construction works of labor camp and associate facilities. Altogether amount of those produced wastes in a single day is nearly 30 kg during the pre-construction phase.
Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):

During the pre-construction period wastes will be generated from some preparatory activities, such as construction of labor camp, site office, material storage/stack yard and associated facilities, etc. and removal of road pavement. All these activities also will be carried out by numbers of local labors. So, around 35 kilograms of construction related wastes, such as bricks, aggregates, leftover cements, sands, etc. will be generated, which are typical solid wastes and a negligible quantity (nearly 5 kg) of bio and non-biodegradable wastes will be generated from the daily necessities of workers and construction staffs, such as food wastes, polythene, papers, plastics, etc. Some chemical waste, like paints, oils, etc. and small amount of solid and liquid wastes from the immediate use of constructed latrines by the workers may also be generated, such as feces and urines.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):
Raw materials: i) Bricks ii) Sand iii) cement iv) Gravel v) water vi) Aggregates.
Quantity: It is difficult to provide exact figures of raw materials on a typical pre-construction site at this level.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:
Vegetation from social forestry or backyard gardening is present on the west side of the existing Hat-Bazar, but will not be harmed by the construction works in any way. No borrow pits were found in the area and the current condition shows that there is no aggregated soil in the peripheral surroundings.

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

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)
Low, A pond is located on the north, about 10 m distant from the proposed site. But that will not be disturbed or modified during the pre-construction phase.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)
There is very little scope of damaging to terrestrial or aquatic ecosystems or endangered species by the activities carried out in this phase.

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:
Only some preparatory physical works will be carried out in this phase which has very little scope to trigger landslide.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)
The scale of erosion of lands is very unlikely at this stage.

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:
Air pollution from generating of dust while carrying and unloading the construction materials to the site or stackyard may create public nuisance and little health effects for the people in the area. But noise and light pollution may not be at such a significant level.

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.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.): ***Solid waste:*** Residual waste from the labor camps will be generated. Wastes from equipment maintenance/vehicles on-site and scrap material will be generated during construction work, which are mostly solid wastes. Waste from civil works includes brick chips, leftover sands, construction debris, etc. And the overall quantity will be tentatively 35 kg daily. ***Liquid wastes:*** Leftover oils or spills from machineries may have a high probability to generate liquid waste. And the quantity can be tentatively 3 kg daily.
Type and quantity of raw materials used (wood, bricks, cement, water, etc.): **Type:** i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) wood 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: There is rarely vegetation in or just adjoining to the proposed location and will not be affected by construction work. The open area beside the proposed location 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) The construction work will not involve digging any borrow pits, quarries, etc. which may develop stagnant water bodies encouraging mosquito or other disease vectors. Moreover, local communities have stated that they do not have severe troubles with mosquitos or other disease vectors.
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 nearby.
Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description) Low. The improvement works will be limited within a small area and not any considerable terrestrial or aquatic ecosystem is present in close vicinity, which could be affected significantly by the construction activities. Also, the area is not known for containing any endangered or threatened species of any kind.
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) Not applicable.
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: No traffic movement impacts on light but low effects of noise and air pollution, and will be managed by preventive measures, like water sprinkling twice a day, covered transport of materials and so on.

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: Dust produced in the proposed site for daily business activities will be minimal compared to the vehicle produced nuisance, and the effects can easily be managed by sprinkling water during the business days by the market management committee. Therefore, it's very unlikely that any significant health hazards or interference of plant growth will take place.
Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description) Soil cover in the market area will be destroyed during the operational period due to the congregation of a large number of people at any market/hat day and removal of grass cover therefore.
Possibility of odor and water, soil quality impacts from SWM and FSM disposal system (High/Medium/Low with description) Putrescible wastes and mismanagement relating to proper cleaning and maintenance of toilets and market sheds may cause odor and degradation of water and soil quality in or around the places, which could be avoided by active and efficient management by the BMC (Bazar Management Committee).
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: Apart from the financial engagement of labors, suppliers and other stakeholders during the construction period, a Hat-Bazar offers numerous multi-faceted benefits to the host and DRP communities. Communities will have easy access to all necessary and daily products on a single platform, producers and sellers can sell their products without any difficulties, and female shoppers and sellers will also receive advantageous and safe spaces for sopping and trading. Many other stakeholders involving in backend supply chain of the trading facilities will also be hugely benefited. Participating in the trading activities of all sorts thus will improve the economic conditions of every involved parties and help them develop as well as gaining access to other support services for achieving a better living condition. Furthermore, the revenue to be generated, if any, from the hat-bazar will eventually contribute to the development of the respective areas.
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 found in the project intervention area, but a pond is located at 10m distance from the site which is more likely not to receive any significant impacts.
Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)

Low. There are no protected areas in or around 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 impact is anticipated.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation) Not applicable.
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: Improved hat-bazar will definitely increase the public gathering which causes the increasing of vehicular movement. This movement may increase the air and noise pollution, but light pollution effect will not be increased. The Bazar Management Committee should remain concerned about this nuisance and take necessary actions by spraying water to reduce the pollution generated from dust.

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)

Environmental Screening Form for Sub-project W1-4

Sub-Project Description Form:

EMCRP/W1- Improvement of 6 nos. Hat Bazar under Cox's Bazar Districts.

Name of Sub-Project: Kutupalong Noukarmath (Rohingya Camp based Hat-Bazar).

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

Estimated total cost of sub-project (in Taka): 300 Lac Tk.

Estimated construction period duration: 1 year

Estimated total cost of the component (in Taka): **50 Lac Tk.**

Estimated Operation and Maintenance period (life of sub-project): Project design life is more than 15 (Fifteen) years but Government policies will determine the period for sub-projects to operate in/near the camps.

District: Cox's Bazar **Sub-District**: Ukhiya **Union**: Palongkhali

Name of Community/Local Area: DRP of Camp-7, 6 & 2E

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.):

The Sub-Project is categorized as a DRP camp based hat-bazar. The key stakeholders or beneficiaries are the Displaced Rohingya People (DRP) but people from host communities are more likely to take part in trading activities as well. The proposed hat-bazar will be improved within a designated area on Govt. land with some pre-identified interventions.

The proposed interventions include the construction of 01 no. Fish Shed (Dimension: 25'-0" x 15'-0"), 01 no. Meat Shed (Dimension: 25'-0" x 15'-0"), 01 to 02 nos. Multipurpose Shed (Dimension: 40'-0" x 15'-0"), 01 no. Women's Market (Dimension: 40'-0" x 15'-0"), 01 no. Open Sale Platform (Dimension: 40'-0" x 15'-0"), 02 nos. Toilet cum Urinal (Dimension: 15'-0" x 10'-0"; each), 02 to 03 nos. Tubewell (Dimension: 10'-0" x 10'-0"; each), and apart from these, Internal Road and Very Shallow depth surface drain (if and where required) will be added to interventions; Road safety work and Environmental Mitigation and Enhancement works are also included in the project activity.

The footprint area for a hat-bazar is at least 25% higher than the estimated land area for establishment, as the impact will surpass the boundary when the target component remains open for operation. Therefore, the estimated footprint / land area for this sub-project is 5,000 sq. feet.

Among natural resources to be used for this improvement works are soil (land area and bricks), water, wood, bamboos, sand and silt, primarily.

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.:

Proposed Kutupalong Noukarmath Rohingya Camp based Hat-Bazar is situated within the catchment area of DRP of Camp-7, 6 & 2E under Palongkhali union, Ward-1 of Ukhiya Upazila. This targeted Hat-Bazar is inside the camp boundary. A 20 feet existing HBB road passing through the proposed Hat-Bazar as well as connect to the Rohingya camp 6. During the pick hour (from 9 am to 11 am and from 2:30pm to 4:30 pm), this place remains very busy with the presence and activities of locals,

stakeholders, different GO & NGOs officials, services providers etc. Some major features are a mosque named Abujar Gaffary Mosque is located at 10m to the north side and a learning center is positioned at 100m to the west side. No Important environmental features are found within the sub-project. Existing tin and bamboo made structures will be replaced during pre-construction period and the improved structures will be constructed there.

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. During the participatory public consultation meeting representatives from Sellers, consumers, host communities, DRP's, Bazar Management Committee (BMC), farmers, elders and other stakeholders attended and showed no objection to the improvement of this infrastructure on the proposed site. The public consultation meeting results confirmed that improvement of this hat-bazar will increase socio-economic interest in the communities and make trading system and living standard more comfortable to all these people.

The proposed Hat-Bazar is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any significant 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. No drainage congestion/water loggings have been observed in this area. As the improvement work is restricted to a designated area, no outside disturbing activity will be involved. Moreover, appropriate mitigation measures will be taken according to the ESMP for minimizing the air, dust and noise pollution.

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

During construction period solid waste will be generated due to construction activities. The types of wastes are brick chips, unused sand, wood, gravels etc. Negligible amount of plastic, fuel etc. will be generated in equipment/stack yards. Human wastes will be generated in labor camp, if local labors are not used inside the camp areas. Dust and noise (primarily the hustle and bustle of human congregation) are among the nuisance that may generate during the operation phase.

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. Sensitive environmental, cultural, archaeological, religious sites within 1 kilometer of site include Abujar Gaffari mosque (10m), DRP settlements (15m), Camp 2 CiC office (500m) to the north, DRP Settlements (8m), Water tank (350m) to the south, Abu Malek A Shahari mosque (250m), Block-G graveyard, DRP settlements (100m) to the east and DRP settlements (10m), Camp 6 CiC office (500m), Mukti Learning Center (100m) to the west. Apart from these structures no other sensitive environmental, cultural, archaeological, religious sites exists.

In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration routes were about 1-2 km away from this sub-project. No disturbance is anticipated due to construction activities to those social and environmental components.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions:

The proposed hat-bazar will be improved within a designated area on Govt. periphery with some identified interventions. The proposed interventions include construction of 01 no. Fish Shed (Dimension: 25'-0" x 15'-0"), 01 no. Meat Shed (Dimension: 25'-0" x 15'-0"), 01 to 02 nos. Multipurpose Shed (Dimension: 40'-0" x 15'-0"), 01 no. Women's Market (Dimension: 40'-0" x 15'-0"), 01 no. Open Sale Platform (Dimension: 40'-0" x 15'-0"), 02 nos. Toilet cum Urinal (Dimension: 15'-0" x 10'-0"; each), 02 to 03 nos. Tubewell (Dimension: 10'-0" x 10'-0"; each), and apart from these, Internal Road and Very Shallow depth surface drain (if and where required) will be added to interventions; Road safety work and Environmental Mitigation and Enhancement works are also included in the project activity.

Sub-project Location:

The sub-project area is situated in Rohingya camp-7 of Palongkhali Union, Ward-1 under Ukhiya Upazila. Cox's Bazar district. The sub-project area is located at $21^0$12'10''N and $92^0$09'38''E. The distance from the Upazila headquarter is about 7 km. Nearby major roads are camp-6 connecting road and camp-2E connecting road.

Land ownership

The land is owned by the Government of Bangladesh.

Expected construction period: 1 Year

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:

The improvement works will take place on a land area of 4600 sq.ft, and the influence area will cover the entire footprint area in respect to the existing settings of the said component. The area houses different socio-economic, environmental, cultural and religious features and institutions, such as Abujar Gaffari mosque (10m), DRP settlements (15m), Camp 2 CiC office (500m) to the north, DRP Settlements (8m), Water tank (350m), Block-F (10m), Block-G (500m) to the south, Abu Malek A Shahari mosque (250m), Block-G graveyard, DRP settlements (100m) to the east and DRP settlements (10m), Camp 6 CiC office (500m), Mukti Learning Center (100m) to the west.

Within the influence area of the subproject no historical sites were identified. Also, there is no evidence of elephant movement close to the subproject location.

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:

Abujar Gaffari mosque (10m), Camp 2 CiC office (500m) to the north, a Water tank (350m)to the south, Abu Malek A Shahari mosque (250m) and Block-G graveyard to the east and Camp 6 CiC office (500m), Mukti Learning Center (100m) to the west. DRP settlements are located all around the

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

A sketch of the project surrounding area with several features at relatively distant places and locations of sensitive institutions in the project surrounding areas are shown in figure B.1.1

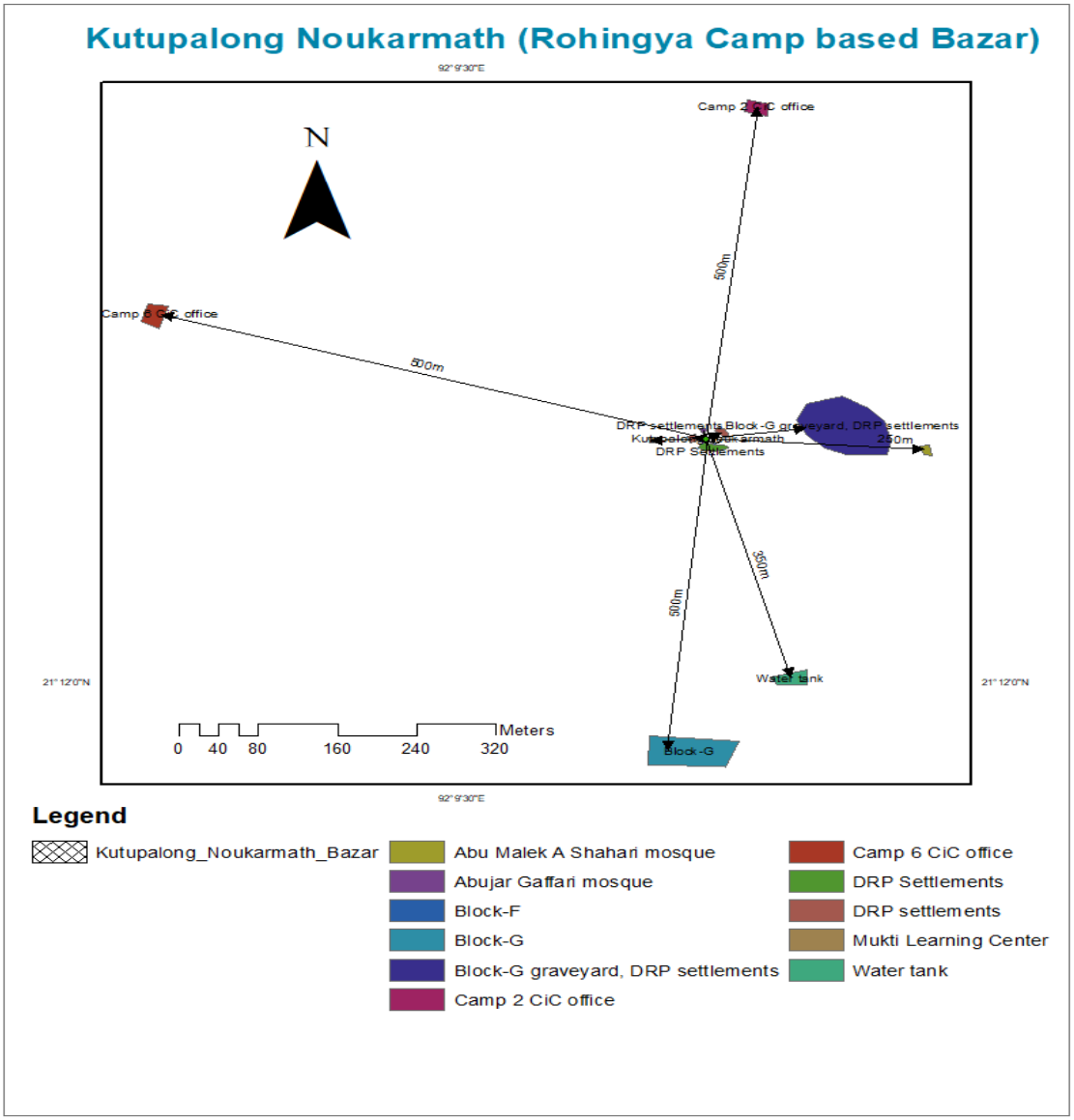

Figure B.1.1: A sketch of the project intervention area

Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive features found in the footprint area. Several mosques, shops, learning center and local settlement were found during the survey but those will not be affected by the construction works, as the activities will be carried out within a designate area in a controlled manner and necessary preventive and mitigation measures will be followed during the entire construction period.

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

No. Elephant migration routes or corridors were present near the sub-project area about 5-6 years ago, but no presence of elephants or their migration routes at this moment. This information is

confirmed with maps established by UNHCR/IUCN and the consultation meeting with local stakeholders.

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

N/A (This activity will be confined within a designated area and no forests are present in the area of intervention).

(3) Other issues: N/A

*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 pedestrians. Natural air action, over the road surface which causes dust circulation.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as private car, tempo, auto rickshaw, etc. move on the road passing through the proposed site, throughout the day and night generating noise but within tolerable limit in most cases. Hustle and bustle among the people is a prominent but natural source of noise during a typical busy market day.

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):

Landslide potential is low. There is low possibility of soil erosion or landslide during construction period of targeted sub-project. The impacts are negative but very small scale, site-specific within a relatively small area and manageable by mitigation measures.

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

Groundwater is the main source of potable water in the Sub-project area. The shallow depth is about 60 feet to 70 feet and deep tube well depth is 700 to 800 feet. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Water from the shallower aquifers contains medium concentration of iron. 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 been 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:

Trees are present in the area scarcely, but not within the area of intervention.

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 existing 15 ft HBB camp 6 & 2E connecting road are available for access. It is also connected to Ukhiya-Teknaf highway. It is possible to carry the construction materials over the road to the proposed site.
Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction: An open space is required to set up a labor camp with associated facilities (toilet for male and female workers, kitchen for cooking, tube-well for water supply facility, and electricity connection) to support the workforce during construction. The space should have enough land area to accommodate a stack yard along with a site office, if possible. This open space should be selected in such a way that workers do not need to travel/walk through a longer distance to reach the site and the place can be secured with proper fencing with a guard be posted at the entrance. The space or land area can be used on rental basis or under a mutual agreement between the owner and the contractor. The contract/consent document must be kept at the site office, whatsoever the mode of the contract is.
Possible location of labor camps: Labor camp can be established beside the sub-project location since there are available open Govt./ private lands. However, this will have to be done with the consent of land owner 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) Bamboo & wood from mobilized materials viii) clay are the most common type of building materials used in construction works.
Identification of access road for transportation (Yes/No): Yes. An existing 15 ft HBB camp 6 & 2E connecting road are available for access.
Location identification for raw material storage: Best option for raw material storage is any sufficiently available space next to the labor camp or the site office and away from steep slopes. However, this will need to arrange an open field and should be consulted with local communities. Material storage area must be well fenced and materials will be covered with tarpaulins.
Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.): Earth/ mud, plastics, brick chips, cement dusts, and dust from bricks can be found during pre-construction time which can be identified as solid wastes. Also, brick chips, cement, sand, bamboo stalks, remnants of tin and other leftover pre-construction materials can be found after the construction of labor camp, latrines and kitchen. Negligible amount of bio and non-biodegradable Solid waste (incl. food waste, plastics, polythene, paper, etc.) may be produced from the use of working labors engaged in construction works of labor camp and associate facilities. Altogether amount of those produced wastes in a single day is nearly 30 kg during the pre-construction phase.
Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.): During the pre-construction period wastes will be generated from some preparatory activities, such

as construction of labor camp, site office, material storage/stack yard and associated facilities, etc. and removal of road pavement. All these activities also will be carried out by numbers of local labors. So, around 35 kilograms of construction related wastes, such as bricks, aggregates, leftover cements, sands, etc. will be generated, which are typical solid wastes and a negligible quantity (nearly 5 kg) of bio and non-biodegradable wastes will be generated from the daily necessities of workers and construction staffs, such as food wastes, polythene, papers, plastics, etc. Some chemical waste, like paints, oils, etc. and small amount of solid and liquid wastes from the immediate use of constructed latrines by the workers may also be generated, such as feces and urines.
Type and quantity of raw materials used (wood, bricks, cement, water, etc.): **Raw materials:** i) Bricks ii) Sand iii) cement iv) Gravel v) water vi) Aggregates. **Quantity:** It is difficult to provide exact figures of raw materials on a typical pre-construction site at this level.
Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards: Vegetation from social forestry or backyard gardening is present in surrounding areas, but very scarcely and will not be harmed by the construction works in any way. No borrow pits were found in the area and the current condition shows that there is no aggregated soil in the peripheral surroundings.
Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors:(High/Medium/Low with explanation) The possibility is Low, for stagnant water bodies in borrow pits/quarries for inviting mosquito breeding ground.
Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description) Low, the area doesn't possess any existing drainage channel or surface water bodies in close vicinity.
Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description) There is very little scope of damaging to terrestrial ecosystems, but no information regarding the presence of any endangered species was available.
Activities that can lead to landslides, slumps, slips and other mass movements in road cuts: Only some preparatory physical works will be carried out in this phase which has very little scope to trigger landslide.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description) The scale of erosion of lands is very unlikely at this stage.
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: Air pollution from generating of dust while carrying and unloading the construction materials to the site or stackyard may create public nuisance and little health effects for the people in the area. But noise and light pollution may not be at such a significant level.

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.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.): ***Solid waste:*** Residual waste from the labor camps will be generated. Wastes from equipment maintenance/vehicles on-site and scrap material will be generated during construction work, which are mostly solid wastes. Waste from civil works includes brick chips, leftover sands, construction debris, etc. And the overall quantity will be tentatively 35 kg daily. ***Liquid wastes:*** Leftover oils or spills from machineries may have a high probability to generate liquid waste. And the quantity can be tentatively 3 kg daily.
Type and quantity of raw materials used (wood, bricks, cement, water, etc.): **Type:** i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) wood 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: Vegetation is very scarce in the sub-project area and will not be affected by the construction work. The open area beside the proposed location 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) The site is devoid of any water bodies in the close vicinity, and not too much water will be required during the construction period that may cause temporary water stagnation. Moreover, local communities have stated that they do not have severe troubles with mosquitos or other disease vectors.
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.
Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description) Low. The improvement works will be limited within a small area and not any considerable terrestrial or aquatic ecosystem is present in close vicinity, which could be affected significantly by the construction activities. Also, the area is not known for containing any endangered or threatened species of any kind.
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) Not applicable.
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: No traffic movement impacts on light but low effects of noise and air pollution, and will be managed by preventive measures, like water sprinkling twice a day, covered transport of materials and so on.

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: Dust produced in the proposed site for daily business activities will be minimal compared to the vehicle produced nuisance, and the effects can easily be managed by sprinkling water during the business days by the market management committee. Therefore, it's very unlikely that any significant health hazards or interference of plant growth will take place.
Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description) Soil cover in the market area will be destroyed during the operational period due to the congregation of a large number of people at any market/hat day and removal of grass cover therefore.
Possibility of odor and water, soil quality impacts from SWM and FSM disposal system (High/Medium/Low with description) Putrescible wastes and mismanagement relating to proper cleaning and maintenance of toilets and market sheds may cause odor and degradation of water and soil quality in or around the places, which could be avoided by active and efficient management by the BMC (Bazar Management Committee).
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: Apart from the financial engagement of labors, suppliers and other stakeholders during the construction period, a Hat-Bazar offers numerous multi-faceted benefits to the host and DRP communities. Communities will have easy access to all necessary and daily products on a single platform, producers and sellers can sell their products without any difficulties, and female shoppers and sellers will also receive advantageous and safe spaces for sopping and trading. Many other stakeholders involving in backend supply chain of the trading facilities will also be hugely benefited. Participating in the trading activities of all sorts thus will improve the economic conditions of every involved party and help them develop as well as gaining access to other support services for achieving a better living condition. Furthermore, the revenue to be generated, if any, from the hat-bazar will eventually contribute to the development of the respective areas.
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 found in the project intervention area, therefore, no such effect can be 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. There are no protected areas in or around 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 impact is anticipated.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation) Not applicable.
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: Improved hat-bazar will definitely increase the public gathering which causes the increasing of vehicular movement. This movement may increase the air and noise pollution, but light pollution effect will not be increased. The Bazar Management Committee should remain concerned about this nuisance and take necessary actions by spraying water to reduce the pollution generated from dust.

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)

Environmental Screening Form for Sub-project Component W1-5

Sub-Project Description Form:

EMCRP/W1- Improvement of 6 nos. Hat Bazar under Cox's Bazar Districts.

Name of Sub-Project: Lambashia (Rohingya Camp based Hat-Bazar).

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

Estimated total cost of sub-project (in Taka): 300 Lac Tk.

Estimated construction period duration: 1 year

Estimated total cost of the component (in Taka): **50 Lac Tk.**

Estimated Operation and Maintenance period (life of sub-project): Project design life is more than 15 (Fifteen) years but Government policies will determine the period for sub-projects to operate in/near the camps.

District: Cox's Bazar **Sub-District**: Ukhiya **Union**: Rajapalong

Name of Community/Local Area: Kutupalong, Lambashia & Modhuchora

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.):

The Sub-Project is categorized as a DRP camp based hat-bazar. The key stakeholders or beneficiaries are the Displaced Rohingya People (DRP) but people from host communities are more likely to take part in trading activities as well. The proposed hat-bazar will be improved within a designated area on Govt. land with some pre-identified interventions.

The proposed interventions include the construction of 01 no. Fish Shed (Dimension: 25'-0" x 15'-0"), 01 no. Meat Shed (Dimension: 25'-0" x 15'-0"), 01 to 02 nos. Multipurpose Shed (Dimension: 40'-0" x 15'-0"), 01 no. Women's Market (Dimension: 40'-0" x 15'-0"), 01 no. Open Sale Platform (Dimension: 40'-0" x 15'-0"), 02 nos. Toilet cum Urinal (Dimension: 15'-0" x 10'-0"; each), 02 to 03 nos. Tubewell (Dimension: 10'-0" x 10'-0"; each), and apart from these, Internal Road and Very Shallow depth surface drain (if and where required) will be added to interventions; Road safety work and Environmental Mitigation and Enhancement works are also included in the project activity.

The footprint area for a hat-bazar is at least 25% higher than the estimated land area for establishment, as the impact will surpass the boundary when the target component remains open for operation. Therefore, the estimated footprint / land area for this sub-project is 6500 sq. feet.

Among natural resources to be used for this improvement works are soil (land area and bricks), water, wood, bamboos, sand and silt, primarily.

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.:

Proposed Lambashia Rohingya Camp based Hat-Bazar is situated within the catchment area of Kutupalong, Lambashia & Modhuchorra Rohingya camp area of Rohingya camp no. 1E under Rajapalong union, Ward-9 of Ukhiya Upazila. This targeted Hat-Bazar is inside the camp boundary. A 20 feet existing HBB road passing through the proposed Hat-Bazar as well as connect to Rohingya camp 1W. During the pick hour (from 8:30 am to 11:30 am and from 2:00pm to 4:30 pm), this place remains very busy by the presence and activities of locals, stakeholders, different GO & NGOs

officials, services providers etc. Some major features near the proposed location are a mosque named Baytur Nagar Jame mosque located at 30m to the north side and social forest (15m), Mosjid - a-Belal is on 50m to the south side. Apart from these patches of vegetation containing large and matured trees on the north side and south side are located within 200m radius of the sub-project. No further important environmental features are found within the sub-project. Existing tin and bamboo made structures will be replaced during pre-construction period and the improved structures will be constructed there.

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. During the participatory public consultation meeting representatives from Sellers, consumers, host communities, DRP's, Bazar Management Committee (BMC), farmers, elders and other stakeholders attended and showed no objection to the improvement of this infrastructure on the proposed site. The public consultation meeting results confirmed that improvement of this hat-bazar will increase socio-economic interest in the communities and make trading system and living standard more comfortable to all these people.

The proposed Hat-Bazar is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any significant 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 improvement work is restricted to a designated area, no outside disturbing activity will be involved. Moreover, mitigation measures will be taken according to the ESMP for minimizing the air, dust and noise pollution.

Types of waste to be generated during construction and operation phase:
During construction period solid waste will be generated due to construction activities. The types of wastes are brick chips, unused sand, wood, gravels etc. Negligible amount of plastic, fuel etc. will be generated in equipment/stack yards. Human wastes will be generated in labor camp, if local labors are not used inside the camp areas. Dust and noise (primarily the hustle and bustle of human congregation) are among the nuisance that may generate during the operation phase.

Sensitive social, 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. Sensitive environmental, cultural, archaeological, religious sites within 1 kilometer of site include Homestead forest (7m), DRP settlements (10m) to the north, Mosjid A Belal (50m), Social forest (15m), Clinic (1km), Community center (1km) to the south, DRP settlements (8m), Mosque (20m), Kutupalong bazar (1km), Ukhiya-Teknaf highway (1km) to the east and Baytur Nagar jame mosque (30m), DRP settlements (8m) to the west. Apart from these features and structures no other sensitive social, environmental, cultural, archaeological, religious sites exist. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration routes were about 1-2 km away from this sub-project. No disturbance is anticipated due to construction activities to those social and environmental components.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions: The proposed hat-bazar will be improved within a designated area on Govt. land with some identified interventions, such as 01 no. Fish Shed (Dimension: 25'-0" x 15'-0"), 01 no. Meat Shed (Dimension: 25'-0" x 15'-0"), 01 to 02 nos. Multipurpose Shed (Dimension: 40'-0" x 15'-0"), 01 no. Women's Market (Dimension: 40'-0" x 15'-0"), 01 no. Open Sale Platform (Dimension: 40'-0" x 15'-0"), 02 nos. Toilet cum Urinal (Dimension: 15'-0" x 10'-0"; each), 02 to 03 nos. Tubewell (Dimension: 10'-0" x 10'-0"; each), and apart from these, Internal Road and Very Shallow depth surface drain (if and where required) will be added to interventions; Road safety work and Environmental Mitigation and Enhancement works are also included in the project activity.
Sub-project Location: The sub-project area is situated in Rohingya camp-1E of Rajapalong Union, Ward-9 under Ukhiya Upazila, Cox's Bazar district, with a geo-position at $21^0$12'52" N and $92^0$09'23" E. The distance from the Upazila headquarter is about 5 km. Nearby major road is Ukhiya-Teknaf highway, which is connected to the proposed site with a 25 ft. wide HBB road. **Land ownership** The land is owned by the Government of Bangladesh.
Expected construction period: 1 Year
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: The improvement works will take place over a land area of 4600 sq.ft, and the influence area will cover the entire footprint area in respect to the existing settings of the said component. The area houses different socio-economic, environmental, cultural and religious features and institutions, such as Homestead forest (7m), DRP settlements (10m) to the north, Mosjid A Belal (50m), Social forest (15m), Clinic (1km), Community center (1km) to the south, DRP settlements (8m), Mosque (20m), Kutupalong bazar (1km), Ukhiya-Teknaf highway (1km) to the east and Baytur Nagar jame mosque (30m), DRP settlements (8m) to the west. Within the influence area of the subproject no historical sites were identified. Also, there is no evidence of elephant movement close to subproject location.

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:** Homestead forest (7m), DRP settlements (10m) to the north, Mosjid A Belal (50m), Social forest

(15m), Clinic (1km), Community center (1km) to the south, DRP settlements (8m), Mosque (20m), Kutupalong bazar (1km), Ukhiya-Teknaf highway (1km) to the east and Baytur Nagar jame mosque (30m), DRP settlements (8m) to the west. There are no other sensitive environmental, cultural, archaeological sites within the catchment area of this sub-project.

A sketch of the project surrounding area with several features at relatively distant places and locations of sensitive institutions in the project surrounding areas are shown in figure B.1.1

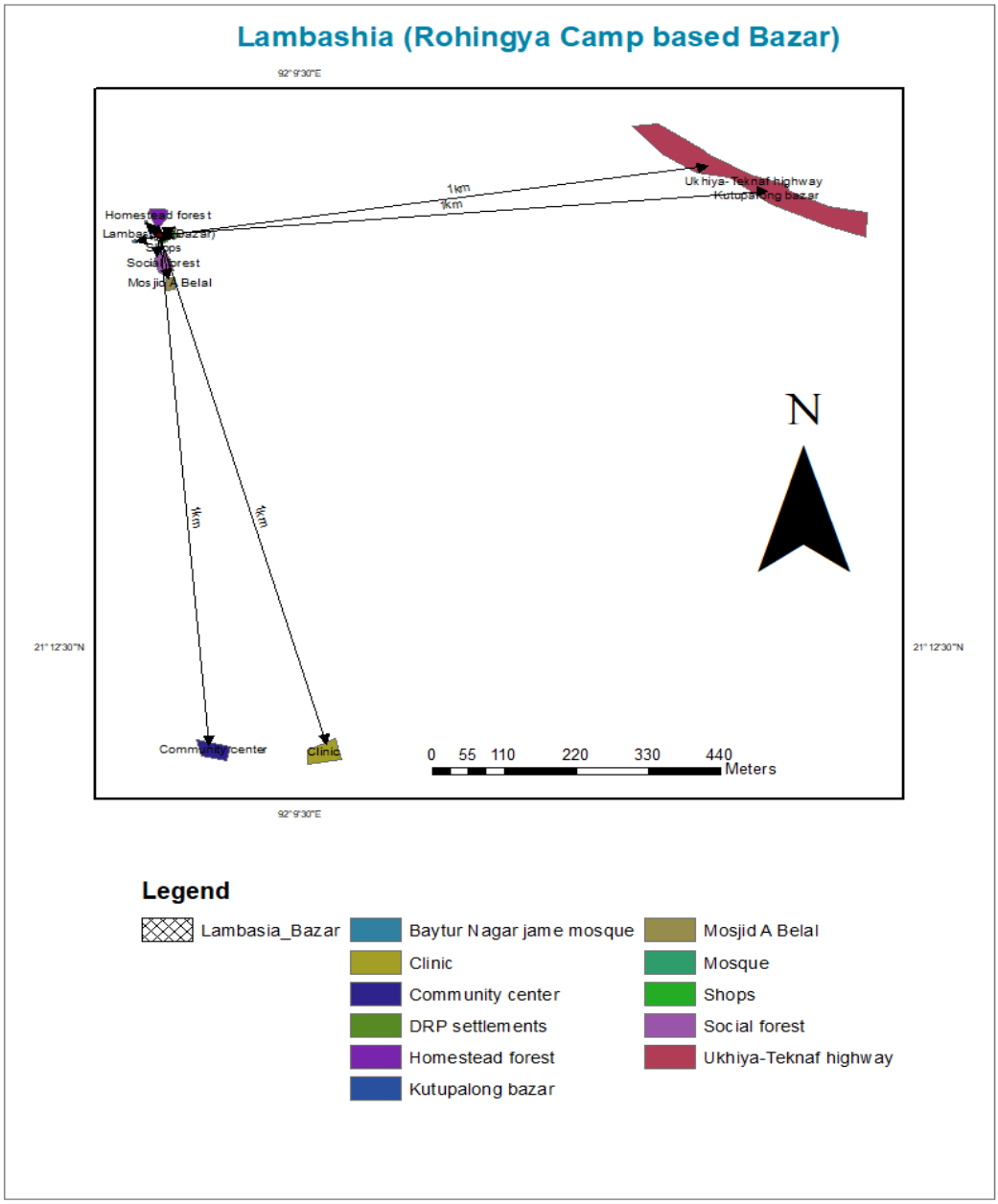

Figure B.1.1: A sketch of the project intervention area

Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive features found in the footprint area. Several mosques, patches of homestead forests, Kutupalong bazar and several DRP settlements were found during the survey, but those will not be affected by the construction works, as the activities will be

carried out within a designated area in a controlled manner, and necessary preventive and mitigation measures will be followed during the entire construction period.

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

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 confined within a designated area and no forests are present in the area of intervention)

(3) Other issues: N/A

*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 pedestrians. Natural air action, over the road surface which causes dust circulation.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as private car, tempo, auto rickshaw, etc. move on the road passing through the proposed site, throughout the day and night generating noise but within tolerable limit in most cases. Hustle and bustle among the people is a prominent but natural source of noise during a typical busy market day.

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):

Landslide potential is low. There is low possibility of soil erosion or landslide during construction period of targeted sub-project. The impacts are negative but very small scale, site-specific within a relatively small area and manageable by mitigation measures.

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

Groundwater is the main source of potable water in the Sub-project area. The shallow depth is about 60 feet to 70 feet and deep tube well depth is 700 to 800 feet. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Water from the shallower aquifers contains medium concentration of iron. 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 been 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 south-east side of the proposed subproject area are located within 220m 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 existing 20 ft HBB Lambashia road is available for access. It is also connected to Ukhiya-Teknaf highway. It is possible to carry the construction materials over the road to the proposed site.
Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction: An open space is required to set up a labor camp with associated facilities (toilet for male and female workers, kitchen for cooking, tube-well for water supply facility, and electricity connection) to support the workforce during construction. The space should have enough land area to accommodate a stack yard along with a site office, if possible. This open space should be selected in such a way that workers do not need to travel/walk through a longer distance to reach the site and the place can be secured with proper fencing with a guard be posted at the entrance. The space or land area can be used on rental basis or under a mutual agreement between the owner and the contractor. The contract/consent document must be kept at the site office, whatsoever the mode of the contract is.
Possible location of labor camps: Labor camp can be established beside the road since there are available open private lands. However, this will have to be done with the consent of land owner 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) Bamboo & wood from mobilized materials viii) clay are the most common type of building materials used in construction works.
Identification of access road for transportation (Yes/No): Yes. An existing 20 ft HBB Lambashia road is available for access.
Location identification for raw material storage: Best option for raw material storage is any sufficiently available space next to the labor camp or the site office and away from steep slopes. However, this will need to arrange an open field and should be consulted with local communities. Material storage area must be well fenced and materials will be covered with tarpaulins.
Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.): Earth/ mud, plastics, brick chips, cement dusts, and dust from bricks can be found during pre-construction time which can be identified as solid wastes. Also, brick chips, cement, sand, bamboo

stalks, remnants of tin and other leftover pre-construction materials can be found after the construction of labor camp, latrines and kitchen. Negligible amount of bio and non-biodegradable Solid waste (incl. food waste, plastics, polythene, paper, etc.) may be produced from the use of working labors engaged in construction works of labor camp and associate facilities. Altogether amount of those produced wastes in a single day is nearly 30 kg during the pre-construction phase.
Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.): During the pre-construction period wastes will be generated from some preparatory activities, such as construction of labor camp, site office, material storage/stack yard and associated facilities, etc. and removal of road pavement. All these activities also will be carried out by numbers of local labors. So, around 35 kilograms of construction related wastes, such as bricks, aggregates, leftover cements, sands, etc. will be generated, which are typical solid wastes and a negligible quantity (nearly 5 kg) of bio and non-biodegradable wastes will be generated from the daily necessities of workers and construction staffs, such as food wastes, polythene, papers, plastics, etc. Some chemical waste, like paints, oils, etc. and small amount of solid and liquid wastes from the immediate use of constructed latrines by the workers may also be generated, such as feces and urines.
Type and quantity of raw materials used (wood, bricks, cement, water, etc.): **Raw materials:** i) Bricks ii) Sand iii) cement iv) Gravel v) water vi) Aggregates. **Quantity:** It is difficult to provide exact figures of raw materials on a typical pre-construction site at this level.
Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards: Vegetation from social forestry or backyard gardening is present in surrounding areas, especially on south-east side but very scarcely, and will not be harmed by the construction works in any way. No borrow pits were found in the area and the current condition shows that there is no aggregated soil in the peripheral surroundings.
Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors:(High/Medium/Low with explanation) The possibility is Low, for stagnant water bodies in borrow pits/quarries for inviting mosquito breeding ground.
Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description) Low, the area doesn't possess any existing drainage channel or surface water bodies in close vicinity.
Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description) There is very little scope of damaging to terrestrial ecosystems, but no information regarding the presence of any endangered species was available.
Activities that can lead to landslides, slumps, slips and other mass movements in road cuts: Only some preparatory physical works will be carried out in this phase which has very little scope to trigger landslide.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description) The scale of erosion of lands is very unlikely at this stage.
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

Air pollution from generating of dust while carrying and unloading the construction materials to the site or stackyard may create public nuisance and little health effects for the people in the area. But noise and light pollution may not be at such a significant level.

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.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.): ***Solid waste:*** Residual waste from the labor camps will be generated. Wastes from equipment maintenance/vehicles on-site and scrap material will be generated during construction work, which are mostly solid wastes. Waste from civil works includes brick chips, leftover sands, construction debris, etc. And the overall quantity will be tentatively 35 kg daily. ***Liquid wastes:*** Leftover oils or spills from machineries may have a high probability to generate liquid waste. And the quantity can be tentatively 3 kg daily.
Type and quantity of raw materials used (wood, bricks, cement, water, etc.): **Type:** i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) wood 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: Vegetation is very scarce in the sub-project area and will not be affected by the construction work. The open area beside the proposed location 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) The site is devoid of any water bodies in the close vicinity, and not too much water will be required during the construction period that may cause temporary water stagnation. Moreover, local communities have stated that they do not have severe troubles with mosquitos or other disease vectors.
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.
Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description) Low. The improvement works will be limited within a small area and not any considerable terrestrial or aquatic ecosystem is present in close vicinity, which could be affected significantly by the construction activities. Also, the area is not known for containing any endangered or threatened species of any kind.
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) Not applicable.
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: No traffic movement impacts on light but low effects of noise and air pollution, and will be managed by preventive measures, like water sprinkling twice a day, covered transport of materials and so on.

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: Dust produced in the proposed site for daily business activities will be minimal compared to the vehicle produced nuisance, and the effects can easily be managed by sprinkling water during the business days by the market management committee. Therefore, it's very unlikely that any significant health hazards or interference of plant growth will take place.
Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description) Soil cover in the market area will be destroyed during the operational period due to the congregation of a large number of people at any market/hat day and removal of grass cover therefore.
Possibility of odor and water, soil quality impacts from SWM and FSM disposal system (High/Medium/Low with description) Putrescible wastes and mismanagement relating to proper cleaning and maintenance of toilets and market sheds may cause odor and degradation of water and soil quality in or around the places, which could be avoided by active and efficient management by the BMC (Bazar Management Committee).
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: Apart from the financial engagement of labors, suppliers and other stakeholders during the construction period, a Hat-Bazar offers numerous multi-faceted benefits to the host and DRP communities. Communities will have easy access to all necessary and daily products on a single platform, producers and sellers can sell their products without any difficulties, and female shoppers and sellers will also receive advantageous and safe spaces for sopping and trading. Many other stakeholders involving in backend supply chain of the trading facilities will also be hugely benefited. Participating in the trading activities of all sorts thus will improve the economic conditions of every involved parties and help them develop as well as gaining access to other support services for achieving a better living condition. Furthermore, the revenue to be generated, if any, from the hat-bazar will eventually contribute to the development of the respective areas.

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 found in the project intervention area, therefore, no such effect can be 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. There are no protected areas in or around 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 impact is anticipated.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation) Not applicable.
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: Improved hat-bazar will definitely increase the public gathering which causes the increasing of vehicular movement. This movement may increase the air and noise pollution, but light pollution effect will not be increased. The Bazar Management Committee should remain concerned about this nuisance and take necessary actions by spraying water to reduce the pollution generated from dust.

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)

Environmental Screening Form for Sub-project Component W1-6

Sub-Project Description Form:

EMCRP/W1- Improvement of 6 nos. Hat Bazar under Cox's Bazar Districts.

Name of Sub-Project: Muchra Uthni (Rohingya Camp based Bazar).

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

Estimated total cost of sub-project (in Taka): 300 Lac Tk.

Estimated construction period duration: 1 year

Estimated total cost of the component (in Taka): **50 Lac Tk.**

Estimated Operation and Maintenance period (life of sub-project): Project design life is more than 15 (Fifteen) years but Government policies will determine the period for sub-projects to operate in/near the camps.

District: Cox's Bazar **Sub-District**: Ukhiya **Union**: Rajapalong

Name of Community/Local Area: Muchra uthni (Rohingya camp-5)

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.):

The Sub-Project is categorized as a DRP camp based hat-bazar. The key stakeholders or beneficiaries are the Displaced Rohingya People (DRP) but people from host communities are more likely to take part in trading activities as well. The proposed hat-bazar will be improved within a designated area on Govt. land with some pre-identified interventions.

The proposed interventions include the construction of 01 no. Fish Shed (Dimension: 25'-0" x 15'-0"), 01 no. Meat Shed (Dimension: 25'-0" x 15'-0"), 01 to 02 nos. Multipurpose Shed (Dimension: 40'-0" x 15'-0"), 01 no. Women's Market (Dimension: 40'-0" x 15'-0"), 01 no. Open Sale Platform (Dimension: 40'-0" x 15'-0"), 02 nos. Toilet cum Urinal (Dimension: 15'-0" x 10'-0"; each), 02 to 03 nos. Tubewell (Dimension: 10'-0" x 10'-0"; each), and apart from these, Internal Road and Very Shallow depth surface drain (if and where required) will be added to interventions; Road safety work and Environmental Mitigation and Enhancement works are also included in the project activity.

The footprint area for a hat-bazar is at least 25% higher than the estimated land area for establishment, as the impact will surpass the boundary when the target component remains open for operation. Therefore, the estimated footprint / land area for this sub-project is 15000 sq. feet**.**

Among natural resources to be used for this improvement works are soil (land area and bricks), water, wood, bamboos, sand and silt, primarily.

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.:

Proposed Hat-Bazar is situated within the catchment area of Muchra uthni Rohingya camp area of Rohingya camp no. 5 under Rajapalong union, Ward-9 of Ukhiya Upazila. This targeted Hat-Bazar is inside of camp boundary. A 30 feet existing HBB Army road passing through the proposed Hat-Bazar as well as connect to the Rohingya camp 1, 3, 4, 6 & 7. During the pick hour (from 8:30 am to 11:30 am and from 2:30 pm to 4:30 pm), this place remains very busy with the presence and activities of locals, stakeholders, different GO & NGOs officials, service providers etc. Some major features near the proposed location are a camp based mosque located at 10m to the north side and WFP Food

distribution center at 30m, FH Hospital at 40m to the south side and a khal at 110m to the West. The intervention area doesn't have any existing large or matured vegetation. No further important environmental features are found within the sub-project. Existing tin and bamboo made structures will be replaced during pre-construction period and the improved structures will be constructed there.

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. The local community attended in the participatory public consultation meeting. Their community representatives as Sellers, consumers, host communities, DRP's, stakeholders, Bazar Management Committee (BMC), different representatives, elites and elders have no objection to the improvement this infrastructure in the proposed site; the community also appreciated the initiative of LGED to ensure safe and better portability. The public consultation meeting results confirmed that improvement of this hat-bazar will increase socio-economic interest in the communities and make lives comforts for these people.

The proposed Hat-Bazar is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any significant 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. No drainage congestion/water loggings have been observed in this area. As the improvement work is restricted to a designated area, no outside disturbing activity will be involved. Moreover, mitigation measures will be taken according to the ESMP for minimizing the air, dust and noise pollution.

Types of waste to be generated during construction and operation phase:
During construction period solid waste will be generated due to construction activities. The types of wastes are brick chips, unused sand, wood, gravels etc. Negligible amount of plastic, fuel etc. will be generated in equipment/stack yards. Human wastes will be generated in labor camp, if local labors are not used inside the camp areas. Dust and noise (primarily the hustle and bustle of human congregation) are among the nuisance that may generate during the operation phase.

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. Sensitive environmental, cultural, archaeological, religious sites within 1 kilometer of site include Muchra bazar mosque (10m) to the north, FH Hospital (40m), Female market (10m), Mosque (30m), WFP Food distribution center (30m) to the south, a mosque (500m) to the east, and another mosque (200m) and a khal (110m) to the west. , camp-4 (1km) DRP settlements were found present all around the site, from 10 m to 20m distance. Camp-3 is 1km away on the north and Camp-4 is at the similar distance on the west side from the proposed site. Apart from these features and structures no other sensitive environmental, cultural, archaeological, religious sites exist. In this sub-project area, no elephant migration routes exist (ref. IUCN). Elephant migration routes were about 1-2 km

away from this sub-project. No significant disturbance is anticipated due to construction activities to those social and environmental components.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions: The proposed hat-bazar will be improved within a designated area on Govt. land with some identified interventions, such as 01 no. Fish Shed (Dimension: 25'-0" x 15'-0"), 01 no. Meat Shed (Dimension: 25'-0" x 15'-0"), 01 to 02 nos. Multipurpose Shed (Dimension: 40'-0" x 15'-0"), 01 no. Women's Market (Dimension: 40'-0" x 15'-0"), 01 no. Open Sale Platform (Dimension: 40'-0" x 15'-0"), 02 nos. Toilet cum Urinal (Dimension: 15'-0" x 10'-0"; each), 02 to 03 nos. Tubewell (Dimension: 10'-0" x 10'-0"; each), and apart from these, Internal Road and Very Shallow depth surface drain (if and where required) will be added to interventions; Road safety work and Environmental Mitigation and Enhancement works are also included in the project activity.
Sub-project Location: The sub-project area is situated in Rohingya camp-5 of Rajapalong Union, Ward-9 under Ukhiya Upazila of Cox's Bazar district. It is located at $21^0$12'14''N and $92^0$09'18''E. The distance from the Upazila headquarter is about 8 km. Nearby major road is 30 feet wide HBB Army road, which is connected to the proposed site. **Land ownership** The land is owned by the Government of Bangladesh.
Expected construction period: 1 Year
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: The improvement works will take place over a land area of 4600 sq.ft, and the influence area will cover the entire footprint area in respect to the existing settings of the said component. The area houses different socio-economic, environmental, cultural and religious features and institutions, such as Shops (5m), Muchra bazar mosque (10m), DRP settlements (15m), camp-3 (1km) to the north, FH Hospital (40m), Female market (10m), Mosque (30m), WFP Food distribution center (30m), DRP settlements (20m) to the south, DRP settlements (10m), mosque (500m) to the east and Connecting road (5m), DRP settlements (10m), a khal (110m), mosque (200m), camp-4 (1km) to the west. Within the influence area of the subproject no historical sites were identified. Also, there is no evidence of elephant movement close to subproject location.

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:**

Muchra bazar mosque (10m), DRP settlements (15m), camp-3 (1km) to the north, FH Hospital (40m), Female market (10m), Mosque (30m), WFP Food distribution center (30m), DRP settlements (20m) to the south, DRP settlements (10m), mosque (500m) to the east and Connecting road (5m), DRP settlements (10m), a khal (110m), mosque (200m), camp-4 (1km) to the west. There are no other sensitive environmental, cultural, archaeological sites within the catchment area of this sub-project.

A sketch of the project surrounding area with several features at relatively distant places and locations of sensitive institutions in the project surrounding areas are shown in figure B.1.1.

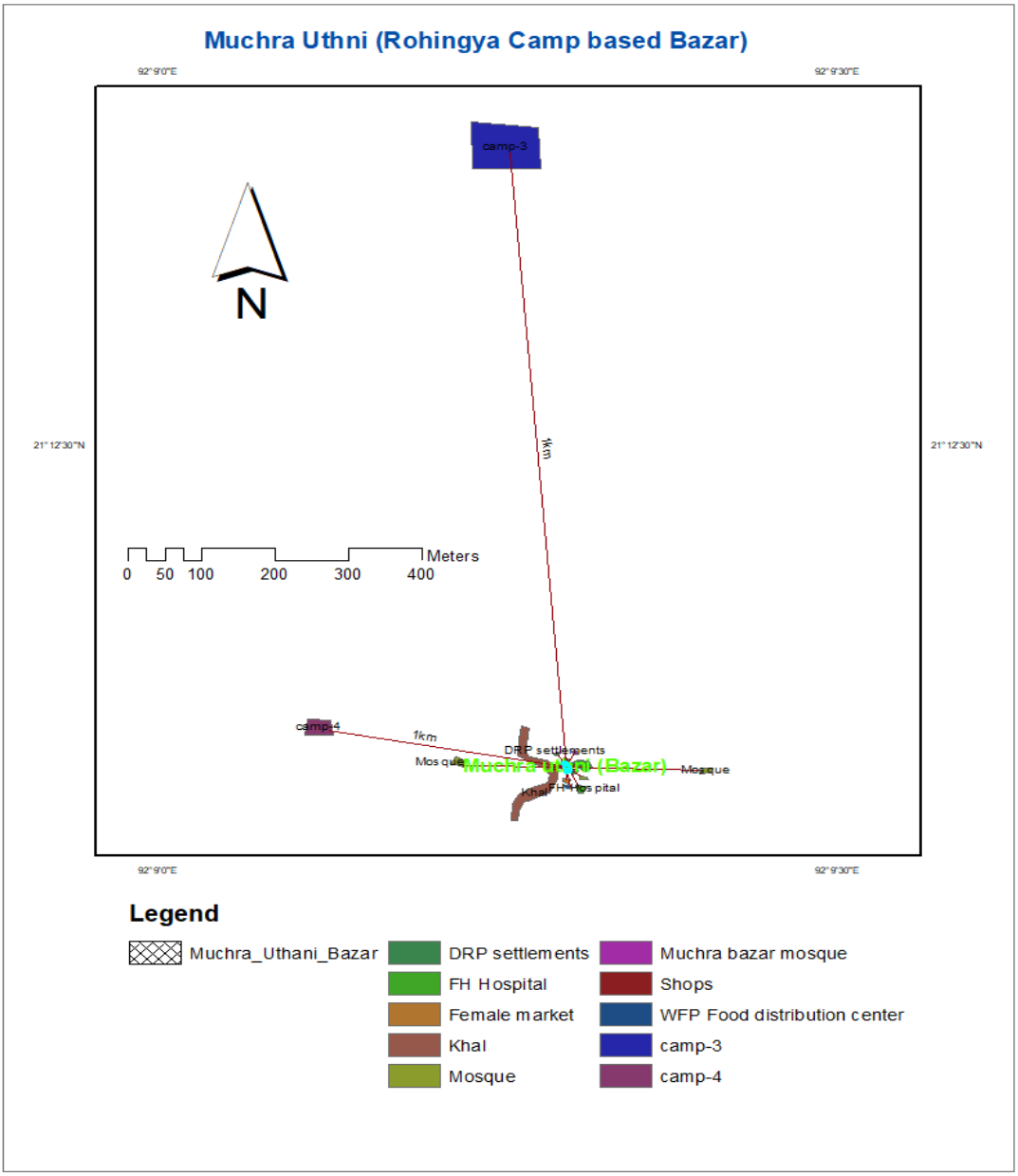

Figure B.1.1: A sketch of the project intervention area

Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive features found in the footprint area, except matured vegetation on the sides of the existing Hat-Bazar which are primarily homestead gardens and

forest. Several mosques, shops, a food distribution center, a Khal, and local settlements were found during the survey. These will not be affected by the construction works, as the activities will be carried out within a designated area in controlled manner and necessary preventive and mitigation measures will be followed during the entire construction period.

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

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 confined within a designated area and no forests are present in the area of intervention)

(3) Other issues: N/A

*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 pedestrians. Natural air action, over the road surface which causes dust circulation.

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as private car, tempo, auto rickshaw, etc. move on the road passing through the proposed site, throughout the day and night generating noise but within tolerable limit in most cases. Hustle and bustle among the people is a prominent but natural source of noise during a typical busy market day.

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):

Landslide potential is low. There is low possibility of soil erosion or landslide during construction period of targeted sub-project. The impacts are negative but very small scale, site-specific within a relatively small area and adjustable by mitigation measures.

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

Groundwater is the main source of potable water in the Sub-project area. The shallow depth is about 60 feet to 70 feet and deep tube well depth is 700 to 800 feet. In the sub-project area, deep groundwater is fresh and potable and arsenic free. Water from the shallower aquifers contains medium concentration of iron. 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 been 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) There is a Khal in the west of the proposed site, at 110 m distance, which is the source of surface water in the close vicinity. However, water quality data was not available during the survey period.
Status of wildlife movement: **N/A** (None of the information was found about the wildlife movement in or across the area)
State of forestation: Trees are present in the area scarcely, but not within the area of intervention.
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 existing 30 ft wide HBB Army road is available for access. It is also connected to Ukhiya-Teknaf highway on south side. It is possible to carry the construction materials over the road to the improvement site.
Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction: An open space is required to set up a labor camp with associated facilities (toilet for male and female workers, kitchen for cooking, tube-well for water supply facility, and electricity connection) to support the workforce during construction. The space should have enough land area to accommodate a stack yard along with a site office, if possible. This open space should be selected in such a way that workers do not need to travel/walk through a longer distance to reach the site and the place can be secured with proper fencing with a guard be posted at the entrance. The space or land area can be used on rental basis or under a mutual agreement between the owner and the contractor. The contract/consent document must be kept at the site office, whatsoever the mode of the contract is.
Possible location of labor camps: Labor camp can be established beside the proposed location since there are available open Govt./private lands. However, this will have to be done with the consent of land owner 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) Bamboo & wood from mobilized materials viii) clay are the most common type of building materials used in construction works.
Identification of access road for transportation (Yes/No): Yes. A 30 ft wide HBB existing Army road is available for access.
Location identification for raw material storage: Best option for raw material storage is any sufficiently available space next to the labor camp or the

site office and away from steep slopes. However, this will need to arrange an open field and should be consulted with local communities. Material storage area must be well fenced and materials will be covered with tarpaulins.

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

Earth/ mud, plastics, brick chips, cement dusts, and dust from bricks can be found during pre-construction time which can be identified as solid wastes. Also, brick chips, cement, sand, bamboo stalks, remnants of tin and other leftover pre-construction materials can be found after the construction of labor camp, latrines and kitchen. Negligible amount of bio and non-biodegradable Solid waste (incl. food waste, plastics, polythene, paper, etc.) may be produced from the use of working labors engaged in construction works of labor camp and associate facilities. Altogether amount of those produced wastes in a single day is nearly 30 kg during the pre-construction phase.

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

During the pre-construction period wastes will be generated from some preparatory activities, such as construction of labor camp, site office, material storage/stack yard and associated facilities, etc. and removal of road pavement. All these activities also will be carried out by numbers of local labors. So, around 35 kilograms of construction related wastes, such as bricks, aggregates, leftover cements, sands, etc. will be generated, which are typical solid wastes and a negligible quantity (nearly 5 kg) of bio and non-biodegradable wastes will be generated from the daily necessities of workers and construction staffs, such as food wastes, polythene, papers, plastics, etc. Some chemical waste, like paints, oils, etc. and small amount of solid and liquid wastes from the immediate use of constructed latrines by the workers may also be generated, such as feces and urines.

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

Raw materials: i) Bricks ii) Sand iii) cement iv) Gravel v) water vi) Aggregates.

Quantity: It is difficult to provide exact figures of raw materials on a typical pre-construction site at this level.

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

Vegetation is very scarce in the sub-project area and will not be affected by any work during the pre-construction stage. No borrow pits were found in the area and the current condition shows that there is no aggregated soil in the peripheral surroundings.

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

The possibility is Low, for stagnant water bodies in borrow pits/quarries for inviting mosquito breeding ground.

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

Low, there is canal (Khal) in the area, but sufficiently distant from the proposed site, and will not receive any disturbance or modification.

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

There is very little scope of damaging to terrestrial ecosystems, but no information regarding the presence of any endangered species was available.

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts: Only some preparatory physical works will be carried out in this phase which has very little scope to trigger landslide.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description) The scale of erosion of lands is very unlikely at this stage.
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: Air pollution from generating of dust while carrying and unloading the construction materials to the site or stackyard may create public nuisance and little health effects for the people in the area. But noise and light pollution may not be at such a significant level.

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.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.): ***Solid waste:*** Residual waste from the labor camps will be generated. Wastes from equipment maintenance/vehicles on-site and scrap material will be generated during construction work, which are mostly solid wastes. Waste from civil works includes brick chips, leftover sands, construction debris, etc. And the overall quantity will be tentatively 35 kg daily. ***Liquid wastes:*** Leftover oils or spills from machineries may have a high probability to generate liquid waste. And the quantity can be tentatively 3 kg daily.
Type and quantity of raw materials used (wood, bricks, cement, water, etc.): **Type:** i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) wood 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: Vegetation is very scarce in the sub-project area and will not be affected by the construction work. The open area beside the proposed location 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) There are no existing borrow-pits or quarries in close vicinity of the proposed site which may turn to a stagnant water bodies, and not too much water will be required during the construction period that may cause temporary water stagnation. Moreover, local communities have stated that they do not have severe troubles with mosquitos or other disease vectors.
Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description) There is a canal (Khal) in the vicinity, but nearly at 110 m distance from the site, that will not be disturbed or modification considering the scale and mode of construction works to be taken place in the site.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description) Low. The improvement works will be limited within a small area and not any considerable terrestrial or aquatic ecosystem is present in close vicinity, which could be affected significantly by the construction activities. Also, the area is not known for containing any endangered or threatened species of any kind.
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) Not applicable.
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: No traffic movement impacts on light but low effects of noise and air pollution, and will be managed by preventive measures, like water sprinkling twice a day, covered transport of materials and so on.

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: Dust produced in the proposed site for daily business activities will be minimal compared to the vehicle produced nuisance, and the effects can easily be managed by sprinkling water during the business days by the market management committee. Therefore, it's very unlikely that any significant health hazards or interference of plant growth will take place.
Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description) Soil cover in the market area will be destroyed during the operational period due to the congregation of a large number of people at any market/hat day and removal of grass cover therefore.
Possibility of odor and water, soil quality impacts from SWM and FSM disposal system (High/Medium/Low with description) Putrescible wastes and mismanagement relating to proper cleaning and maintenance of toilets and market sheds may cause odor and degradation of water and soil quality in or around the places, which could be avoided by active and efficient management by the BMC (Bazar Management Committee).
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: Apart from the financial engagement of labors, suppliers and other stakeholders during the construction period, a Hat-Bazar offers numerous multi-faceted benefits to the host and DRP

communities. Communities will have easy access to all necessary and daily products on a single platform, producers and sellers can sell their products without any difficulties, and female shoppers and sellers will also receive advantageous and safe spaces for sopping and trading. Many other stakeholders involving in backend supply chain of the trading facilities will also be hugely benefited. Participating in the trading activities of all sorts thus will improve the economic conditions of every involved party and help them develop as well as gaining access to other support services for achieving a better living condition. Furthermore, the revenue to be generated, if any, from the hat-bazar will eventually contribute to the development of the respective areas.
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 found in the close vicinity of the intervention area, therefore, no such effect can be 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. There are no protected areas in or around 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 impact is anticipated.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation) Not applicable.
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: Improved hat-bazar will definitely increase the public gathering which causes the increasing of vehicular movement. This movement may increase the air and noise pollution, but light pollution effect will not be increased. The Bazar Management Committee should remain concerned about this nuisance and take necessary actions by spraying water to reduce the pollution generated from dust.

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 of the Work Package-W1

The results of Environmental Screening are summarized in following table as per guidance given in the Project ESMF, Section 8.2:

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1.Sub-Project Interventions	**Improvement of 6 nos. Hat Bazar** (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, or 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	Contractor, environmental specialist of PIU and 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**
			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 material storage area etc.)	Under the sub-project intervention, the overall score is low.	• The construction area is on hilly plain land. The entire construction area within the identified targeted location needs to be well fenced so that DRP, host, service providers 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. • DRP settlements, connecting roads, mosques, etc. are located nearby the proposed location so labor camp needs to be set up in such a location that any types of interventions are not disturbed in any way.	Contractor, environmental specialist of PIU and 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, etc., Risk of crime, Access of DRP, 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	Contractor, environmental specialist of PIU and 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
			to be safe from access by DRP, children, service providers, animals, etc. • Spills/ hazardous substances should be disposed off at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	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 off 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	Contractor, environmental specialist of PIU and 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**
			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 PIU and 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 pick hours. One very effective method is to discuss with the local 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 pick time & at night. • Ear protection devices for the workers & site staffs should be available in site during construction period.	Contractor, environmental specialist of PIU and D&SC	Number of complaints from stakeholders, Use of silencers in noise producing equipment and sound barriers, Noise Level following decibel meter (dB), if required.	Weekly
	Air Quality Conducting works at	Under the sub-project intervention,	• Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather.	Contractor, environmental specialist of	Location of stockpiles, Covering of	Monthly

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	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.	the overall score is low.	• 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, primarily by sight observation.	PIU and D&SC	trucks, Records of air 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 PIU and D&SC	If tree cutting required, to be determined during Design stage, Numbers of complaints from sensitive receptors	Monthly

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	**Frequency**
	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 separately.	Contractor, environmental specialist of PIU and D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at Project location.	Monthly
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	Contractor	Worksite is restored to original conditions; worksite cleanup must be satisfactory; camp has been restored to pre project	After the completion of Works

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	**Frequency**
			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;		conditions.	
	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-4: Environmental and Social Management Plan (ESMP)

ESMP for Improvement of 6 nos. Hat Bazar under Cox's Bazar Districts. (LGED/EMCRP-W1):

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 activities • Preferred land is government/Khash land So, there are no any 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 of the project stakeholders should be consulted • Separate community level consultation meeting with the potential affected HHs • Consultation meeting with Rohingya male and female about the project objectives and scope of works • All the safeguard documents will be disclosed to all the relevant stakeholders	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	• Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. • In case of unavoidable circumstances, alternative access will be provided.	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 natural	• 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.	PIU & Contractor	Environmental Consultant of PIU,

Project Stage	*Potential Environmental & Social Impacts/Issues*	*Proposed Mitigation Measures*	*Institutional Responsibilities*	*Supervision Responsibility*
	drainage	• Tube well location within the construction site will not near any kinds of latrine and soaks well which could be contaminated by those. • 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. • Sub project intervention must avoid natural disturbance to existing slop and natural drainage. • The contractor must ensure sound environment for the local/DRP residents near the sub project site.		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) such as ear plugs, earmuffs, helmets, etc. 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 is completely prohibited in our site and take necessary measures for preventing this problem • 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.	Contractor	Environmental Consultant of PIU, PSC

Project Stage	*Potential Environmental & Social Impacts/Issues*	*Proposed Mitigation Measures*	*Institutional Responsibilities*	*Supervision Responsibility*
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. • Adequate road signs to be planted on access roads to limit vehicular speeds • Properly designed speed ramps will be constructed on access roads • Traffic signs should be both in Bangla and Rohingya language	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. • Local community 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 of heavy machinery and equipment. • Local community will be trained on 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 be put in	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC

Project Stage	*Potential Environmental & Social Impacts/Issues*	*Proposed Mitigation Measures*	*Institutional Responsibilities*	*Supervision Responsibility*
		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 by the Contractor 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 off at waste disposal areas and/ or at the site. • The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. • 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 vehicles, and electrical	• 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 that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. • Proper Signpost at any slippery areas will be ensured in construction site. • Proper measure will be maintained for carrying out fire risk assessment for the construction areas, identify sources of fuel and ignition and	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*
	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.	establish general fire precautions including, means of escape, warning, and fighting fire. • Fire extinguishers will be located at identified fire points around the construction site. The extinguishers must be appropriate to the nature of the potential fire. • This sub-project has Proper communicated 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 trainings for personnel and drills to test 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. • 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 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

Project Stage	*Potential Environmental & Social Impacts/Issues*	*Proposed Mitigation Measures*	*Institutional Responsibilities*	*Supervision Responsibility*
Decommissioning during the project implementation period (including site clearance after the construction)	The impacts are similar to those listed in construction stage: • Pollution from waste materials • Health & Safety risks to workers and local community/DRPs	• Provision to proper measure of mitigation 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. • Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those compartments seems to be significantly worse.	Contractor	Environmental Consultant of PIU/D&SC, XEN, Cox's Bazar, PSC.
Operation & Maintenance	Odors and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	• Preventative maintenance schedule should be followed.	BMC	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Maintenance of assets, properties and equipment	• Periodic maintenance of building structures/ market sheds, platforms, plumbing, and electric equipment has to be carried out. • Toilets have to be cleaned regularly and necessary maintenance including prevention of spillage of water/wastes is to be ensured.	BMC	UNO, Upazila Chairman of Upazila Parishad

Waste Management Plan:

The Contractor shall develop 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 wastes and demolition 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 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 on the ground or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed off in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Other leftover non-hazardous wastes, including construction debris shall be transported to an approved disposal site by pick up tracks or back loaded vehicles with proper care.
- 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-5: Cost of Environmental Mitigation and Enhancement Works in BOQ for each sub-project under work package W1

In consideration to the above-mentioned environmental impacts and their mitigation measures for all sub-project, individual BOQ for each sub-project has been prepared. Following tables will illustrate such items of enhancement and impact mitigation works as well as considering the emerged situation of COVID-19, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites.

Cost of Environmental Enhancement Works for W1-1 in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1.	**Dust suppression measures** Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	Each	Lump sum @ 10,000 BDT	10,000
2.	**Water Supply and Sanitation** Providing and maintaining adequate portable water supply, sanitation, and cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
3.	**First Aid Box** Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all	1 no.	LS @5000 Tk. Per box	5,000

Sl no.	Description of item	Quantity	Unit price	Total amount
	complete as per requirement and full satisfaction of Engineer-in-charge.			
4.	**Water filter** Supplying of best quality **Water Filter** (32 liters) including and extra set of faucets ceramic and at least 2 sets of ceramic filters as per direction of E.I.C	2 nos.	@ Tk. 3,500 tk for each filter	7,000
5.	**Personal Protection Equipment for Workers** 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	@ Tk 3,000	30,000
6.	**Tree plantation** Tree plantation to compensate the felled down trees and enhance the ecological condition in the subproject area- preferably local fruits, flowers, medicinal and ornamental trees- Mango, Jackfruit, Jam, Kathbadam, Arjun, Amloki, Horitoki, Bohera, Sishu etc. (including protection, fencing and conservation during project defect liability period): Preferably at both sides of Road where space is available (fencing as per LGED rate schedule 5.26.14) (Contractors will also be instructed by the consultant and PIU prior to the tree plantation work) at an interval of 10 feet.	20 nos.	@ Tk. 1000	20,000
7.	**Motivation training** 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.	1 no.	LS @ Tk. 10,000	10,000

Sl no.	Description of item	Quantity	Unit price	Total amount
8.	**Site Cleaning and preparation** Site Cleaning and preparation including providing necessary protective fencing and safety measures with **Project sign board** and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ Tk. 15,000	15,000
9.	**Waste disposal facility** 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.	LS	@ Tk. 5000	5,000
10.	**Water Test (Drinking Water samples)** 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. 5,000	5,000
11.	**Working labour shed:** 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
	Subtotal Bill: Environmental facilities			**162,645.72**

Cost of H&S Measures under COVID 19 Situations for W1-1

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 workers for 270 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W-1.1).

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)	54		68	50.00	122	6,100.00	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	1350	16,200.00	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	360	12,600.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1 Can	N/A	2 Can	250.00	3	750.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	9	3,600.00	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						**94,150.00**	

Cost of Environmental Enhancement Works for W1-2 in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1.	**Dust suppression measures** Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	Each	Lump sum @ 10,000 BDT	10,000
2.	**Water Supply and Sanitation** Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
3.	**First Aid Box** Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.	1 no.	LS @5000 Tk. Per box	5,000
4.	**Water filter** Supplying of best quality **Water Filter** (32 liters) including and extra set of faucets ceramic and at least 2 sets of ceramic filters as per direction of E.I.C	2 nos.	@ Tk. 3,500 tk for each filter	7,000

Sl no.	Description of item	Quantity	Unit price	Total amount
5.	**Personal Protection Equipment for Workers** 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	@ Tk 3,000 for each set	30,000
6.	**Tree plantation** Tree plantation to compensate the felled down trees and enhance the ecological condition in the subproject area- preferably local fruits, flowers, medicinal and ornamental trees- Mango, Jackfruit, Jam, Kathbadam, Arjun, Amloki, Horitoki, Bohera, Sishu etc. (including protection, fencing and conservation during project defect liability period): Preferably at both sides of Road where space is available (fencing as per LGED rate schedule 5.26.14) (Contractors will also be instructed by the consultant and PIU prior to the tree plantation work) at an interval of 10 feet.	40 nos.	@ Tk. 1000	40,000
7.	**Motivation training** 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.	1 no.	LS @ Tk. 10,000	10,000
8.	**Site Cleaning and preparation** Site Cleaning and preparation including providing necessary protective fencing and safety measures with **project sign board** and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ Tk. 15,000	15,000

Sl no.	Description of item	Quantity	Unit price	Total amount
9.	**Waste disposal facility** 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.	LS	@ Tk. 5000	5,000
10.	**Water Test (Drinking Water samples)** 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
11.	**Working labour shed:** 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
	Subtotal Bill: Environmental facilities			**182,645.72**

Cost of H&S Measures under COVID 19 Situations for W1-2

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 workers for 270 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W-1.2).

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)	54		68	50.00	122	6,100.00	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	1350	16,200.00	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	360	12,600.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1 Can	N/A	2 Can	250.00	3	750.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	9	3,600.00	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						**94,150.00**	

Cost of Environmental Enhancement Works for W1-3 in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1.	**Dust suppression measures** Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	Each	Lump sum @ 10,000 BDT	10,000
2.	**Water Supply and Sanitation** Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
3.	**First Aid Box** Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.	1 no.	LS @5000 Tk. Per box	5,000
4.	**Water filter** Supplying of best quality **Water Filter** (32 liters) including and extra set of faucets ceramic and at least 2 sets of ceramic filters as per direction of E.I.C	2 nos.	@ Tk. 3,500 tk for each filter	7,000

Sl no.	Description of item	Quantity	Unit price	Total amount
5.	**Personal Protection Equipment for Workers** 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	@ Tk 3,000 for each set	30,000
6.	**Tree plantation** Tree plantation to compensate the felled down trees and enhance the ecological condition in the subproject area- preferably local fruits, flowers, medicinal and ornamental trees- Mango, Jackfruit, Jam, Kathbadam, Arjun, Amloki, Horitoki, Bohera, Sishu etc. (including protection, fencing and conservation during project defect liability period): Preferably at both sides of Road where space is available (fencing as per LGED rate schedule 5.26.14) (Contractors will also be instructed by the consultant and PIU prior to the tree plantation work) at an interval of 10 feet.	20 nos.	@ Tk. 1000	20,000
7.	**Motivation training** 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.	1 no.	LS @ Tk. 10,000	10,000
8.	**Site Cleaning and preparation** Site Cleaning and preparation including providing necessary protective fencing and safety measures with **Project sign board** and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ Tk. 15,000	15,000

Sl no.	Description of item	Quantity	Unit price	Total amount
9.	**Waste disposal facility** 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.	LS	@ Tk. 5000	5,000
10.	**Water Test (Drinking Water samples)** 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
11.	**Working labour shed:** 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
	Subtotal Bill: Environmental facilities			**162,645.72**

Cost of H&S Measures under COVID 19 Situations for W1-3

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 workers for 270 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W-1.3).

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)	54		68	50.00	122	6,100.00	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	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				
	Goggles							
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	1350	16,200.00	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	360	12,600.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1 Can	N/A	2 Can	250.00	3	750.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	9	3,600.00	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						**94,150.00**	

Cost of Environmental Enhancement Works for W1-4 in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1.	**Dust suppression measures** Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	Each	Lump sum @ 10,000 BDT	10,000
2.	**Water Supply and Sanitation** Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
3.	**First Aid Box** Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.	1 no.	LS @5000 Tk. Per box	5,000
4.	**Water filter** Supplying of best quality **Water Filter** (32 liters) including and extra set of faucets ceramic and at least 2 sets of ceramic filters as per direction of E.I.C	2 nos.	@ Tk. 3,500 tk for each filter	7,000

Sl no.	Description of item	Quantity	Unit price	Total amount
5.	**Personal Protection Equipment for Workers** 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	@ Tk 3,000 for each set	30,000
6.	**Tree plantation** Tree plantation to compensate the felled down trees and enhance the ecological condition in the subproject area- preferably local fruits, flowers, medicinal and ornamental trees- Mango, Jackfruit, Jam, Kathbadam, Arjun, Amloki, Horitoki, Bohera, Sishu etc. (including protection, fencing and conservation during project defect liability period): Preferably at both sides of Road where space is available (fencing as per LGED rate schedule 5.26.14) (Contractors will also be instructed by the consultant and PIU prior to the tree plantation work) at an interval of 10 feet.	40 nos.	@ Tk. 1000	40,000
7.	**Motivation training** 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.	1 no.	LS @ Tk. 10,000	10,000
8.	**Site Cleaning and preparation** Site Cleaning and preparation including providing necessary protective fencing and safety measures with **project sign board** and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ Tk. 15,000	15,000

Sl no.	Description of item	Quantity	Unit price	Total amount
9.	**Waste disposal facility** 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.	LS	@ Tk. 5000	5,000
10.	**Water Test (Drinking Water samples)** 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
11.	**Working labour shed:** 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
	Subtotal Bill: Environmental facilities			**182,645.72**

Cost of H&S Measures under COVID 19 Situations for W1-4

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 workers for 270 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W-1.4).

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)	54		68	50.00	122	6,100.00	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	1350	16,200.00	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	360	12,600.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1 Can	N/A	2 Can	250.00	3	750.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	9	3,600.00	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						**94,150.00**	

Cost of Environmental Enhancement Works for W1-5 in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1.	**Dust suppression measures** Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	Each	Lump sum @ 10,000 BDT	10,000
2.	**Water Supply and Sanitation** Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
3.	**First Aid Box** Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.	1 no.	LS @5000 Tk. Per box	5,000
4.	**Water filter** Supplying of best quality **Water Filter** (32 liters) including and extra set of faucets ceramic and at least 2 sets of ceramic filters as per direction of E.I.C	2 nos.	@ Tk. 3,500 tk for each filter	7,000

Sl no.	Description of item	Quantity	Unit price	Total amount
5.	**Personal Protection Equipment for Workers** 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	@ Tk 3,000 for each set	30,000
6.	**Tree plantation** Tree plantation to compensate the felled down trees and enhance the ecological condition in the subproject area- preferably local fruits, flowers, medicinal and ornamental trees- Mango, Jackfruit, Jam, Kathbadam, Arjun, Amloki, Horitoki, Bohera, Sishu etc. (including protection, fencing and conservation during project defect liability period): Preferably at both sides of Road where space is available (fencing as per LGED rate schedule 5.26.14) (Contractors will also be instructed by the consultant and PIU prior to the tree plantation work) at an interval of 10 feet.	20 nos.	@ Tk. 1000	20,000
7.	**Motivation training** 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.	1 no.	LS @ Tk. 10,000	10,000
8.	**Site Cleaning and preparation** Site Cleaning and preparation including providing necessary protective fencing and safety measures with **project sign board** and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ Tk. 15,000	15,000

Sl no.	Description of item	Quantity	Unit price	Total amount
9.	**Waste disposal facility** 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.	LS	@ Tk. 5000	5,000
10.	**Water Test (Drinking Water samples)** 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
11.	**Working labour shed:** 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
	Subtotal Bill: Environmental facilities			**162,645.72**

Cost of H&S Measures under COVID 19 Situations for W1-5

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 workers for 270 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W-1.5).

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)	54		68	50.00	122	6,100.00	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	1350	16,200.00	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	360	12,600.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1 Can	N/A	2 Can	250.00	3	750.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	9	3,600.00	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						**94,150.00**	

Cost of Environmental Enhancement Works for W1-6 in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1.	**Dust suppression measures** Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	Each	Lump sum @ 10,000 BDT	10,000
2.	**Water Supply and Sanitation** Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
3.	**First Aid Box** Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.	1 no.	LS @5000 Tk. Per box	5,000
4.	**Water filter** Supplying of best quality **Water Filter** (32 liters) including and extra set of faucets ceramic and at least 2 sets of ceramic filters as per direction of E.I.C	2 nos.	@ Tk. 3,500 tk for each filter	7,000

Sl no.	Description of item	Quantity	Unit price	Total amount
5.	**Personal Protection Equipment for Workers** 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	@ Tk 3,000 for each set	30,000
6.	**Tree plantation** Tree plantation to compensate the felled down trees and enhance the ecological condition in the subproject area- preferably local fruits, flowers, medicinal and ornamental trees- Mango, Jackfruit, Jam, Kathbadam, Arjun, Amloki, Horitoki, Bohera, Sishu etc. (including protection, fencing and conservation during project defect liability period): Preferably at both sides of Road where space is available (fencing as per LGED rate schedule 5.26.14) (Contractors will also be instructed by the consultant and PIU prior to the tree plantation work) at an interval of 10 feet.	35 nos.	@ Tk. 1000	35,000
7.	**Motivation training** 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.	1 no.	LS @ Tk. 10,000	10,000
8.	**Site Cleaning and preparation** Site Cleaning and preparation including providing necessary protective fencing and safety measures with **project sign board** and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ Tk. 15,000	15,000

Sl no.	Description of item	Quantity	Unit price	Total amount
9.	**Waste disposal facility** 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.	LS	@ Tk. 5000	5,000
10.	**Water Test (Drinking Water samples)** 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
11.	**Working labour shed:** 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
	Subtotal Bill: Environmental facilities			**177,645.72**

Cost of H&S Measures under COVID 19 Situations for W1-6

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 workers for 270 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/W-1.6).

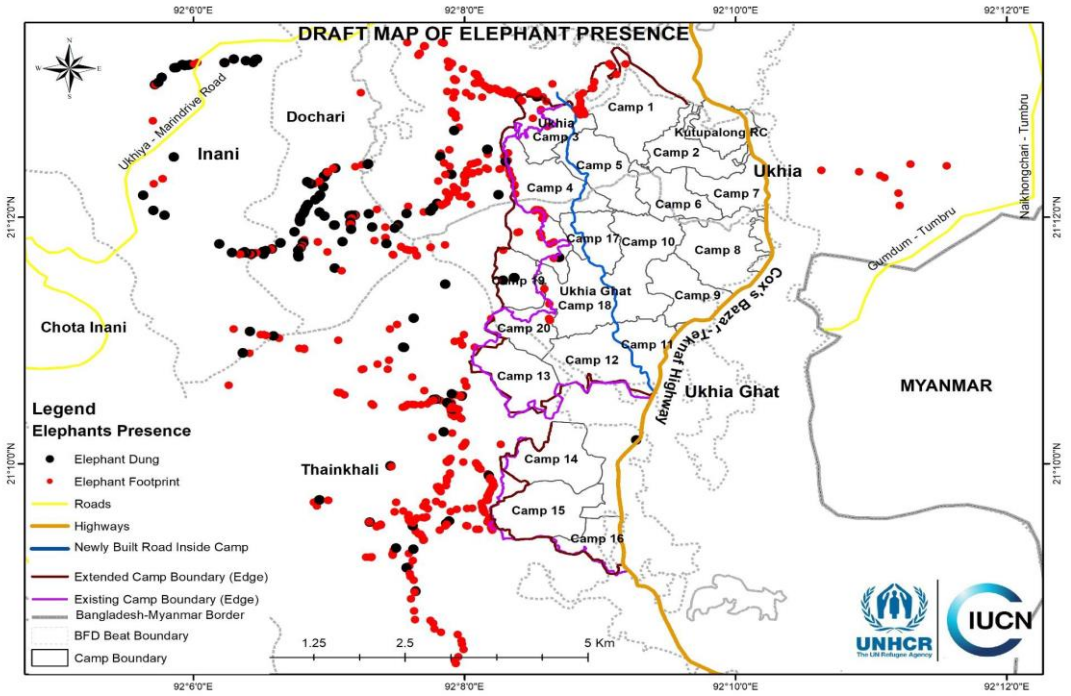
Sl. No.	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a 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)	54		68	50.00	122	6,100.00	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

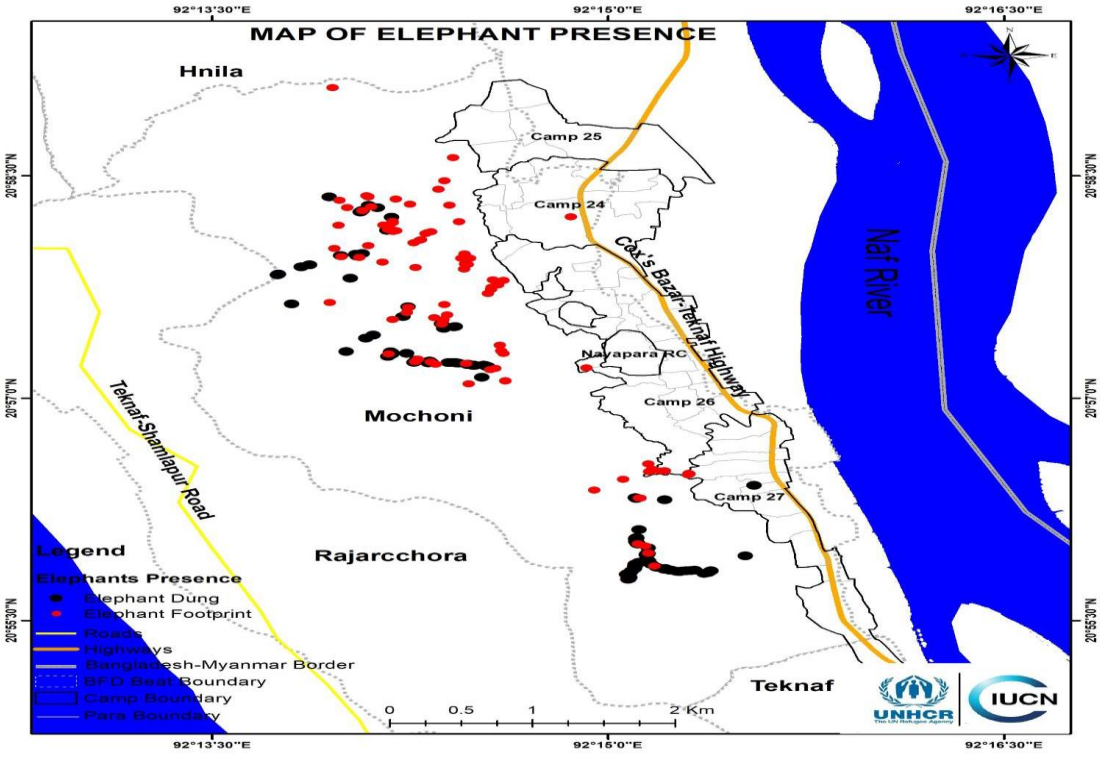
Sl. No.	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	1350	16,200.00	Reusing 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	360	12,600.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1 Can	N/A	2 Can	250.00	3	750.00	
10.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	9	3,600.00	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						**94,150.00**	

Safeguard Personnel for Environmental and Social Management for Work Package-W1

Sl.	Description	Package No.	Quantity	Unit	Unit Rate	Total Amount
1.	Environmental Management Cost for engaging an Environmental & 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 ***One person covering 6 nos. of Hat-Bazar***	EMCRP/W6; Improvement of 6 nos. Hat Bazar under Cox's Bazar Districts.	12	Months	35,000	4,20,000
	Total					**4,20,000**

Appendix-6: Elephant Migration Routes Map





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

Appendix-7: Location Map of each Sub-project

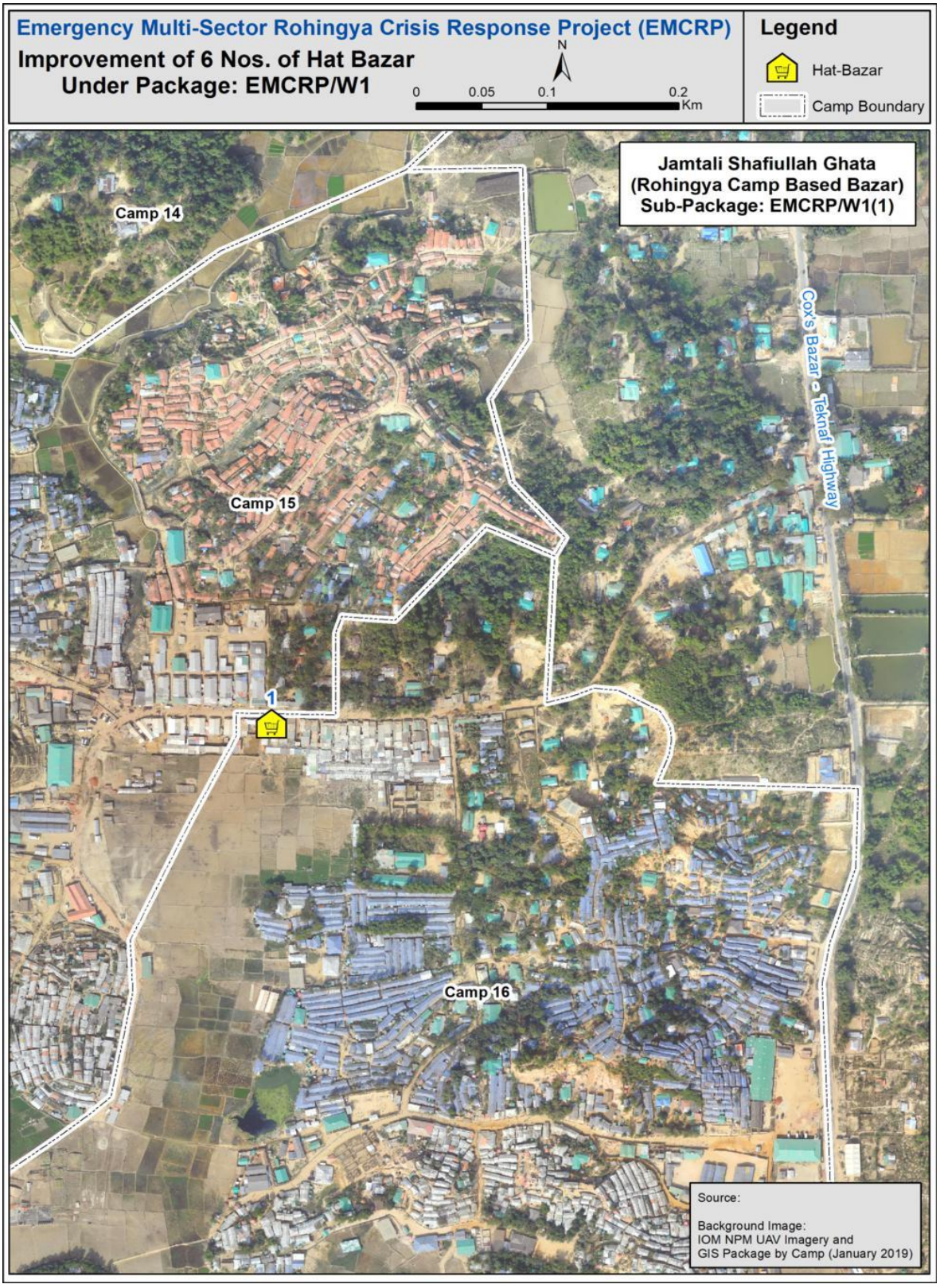


Figure: Location Map of W1-1

Figure: Location Map of W1-2

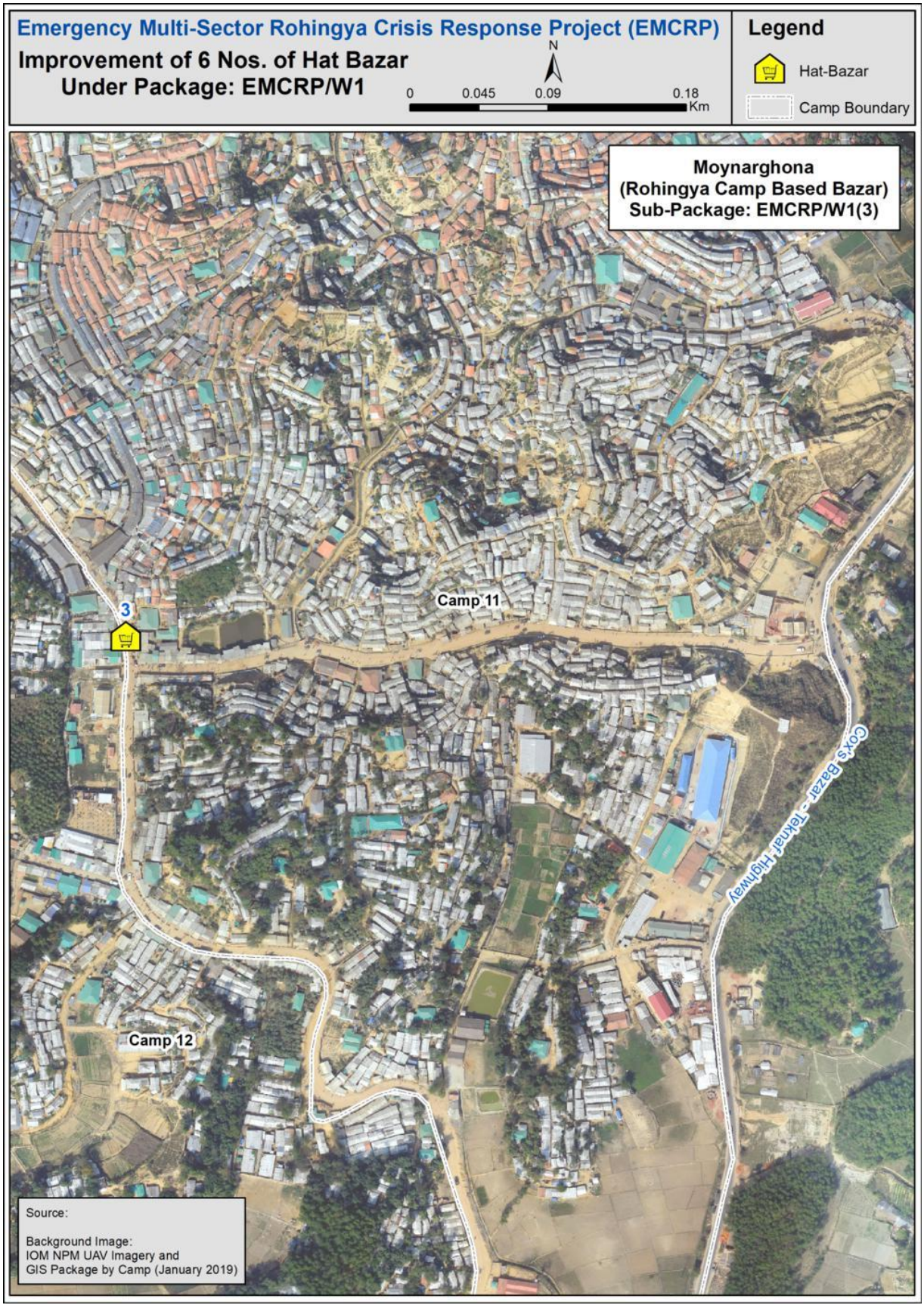


Figure: Location Map of W1-3

Figure: Location Map of W1-4

Figure: Location Map of W1-5

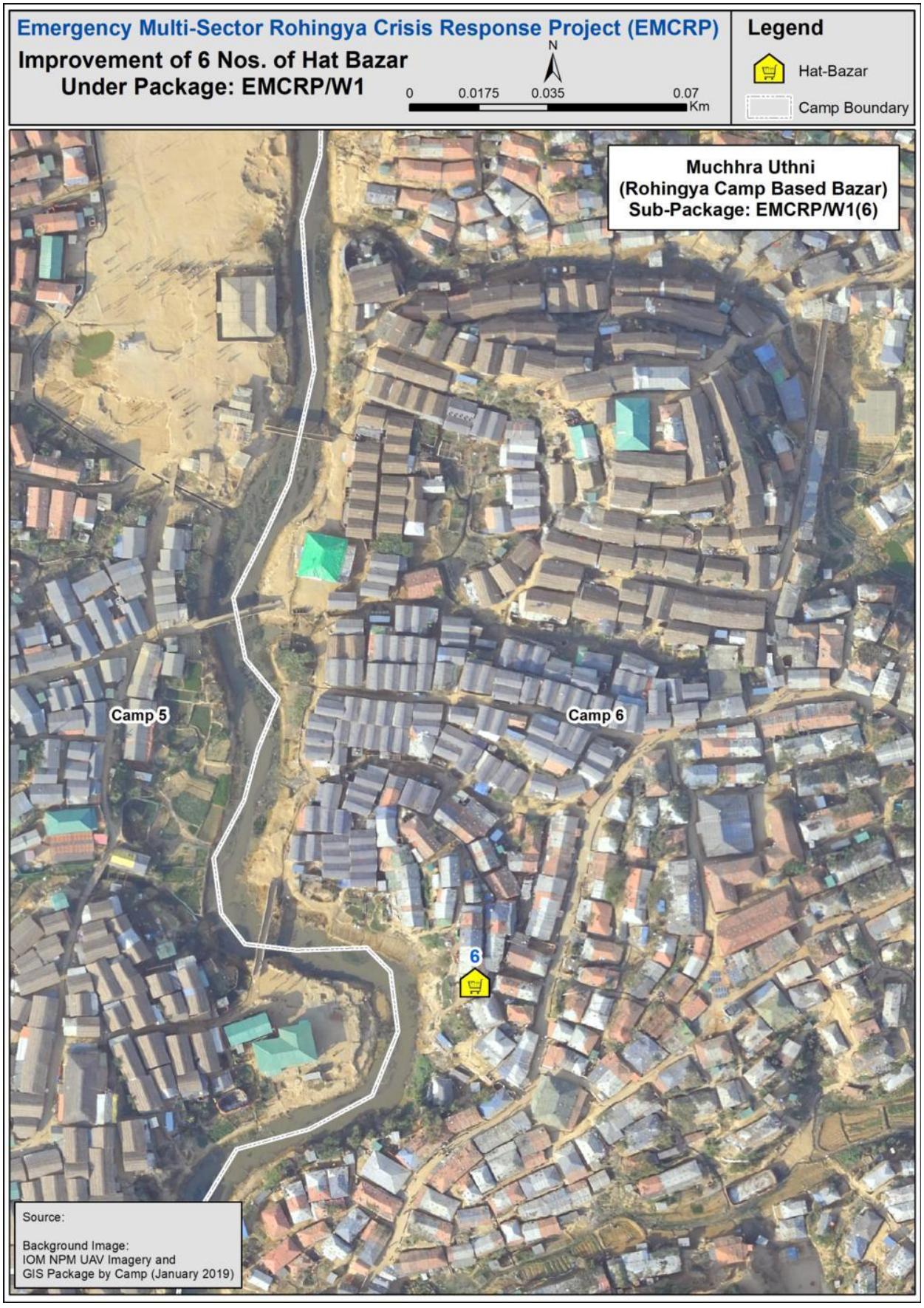


Figure: Location Map of W1-6