GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

Ministry of Local Government, Rural Development and Co-operatives

Local Government Division

Local Government Engineering Department

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762 **IDA Credit No. 5561-BD**




Design and Supervision Consultancy

Environmental Screening Report

For Improvement of Boro Junchari Rubber Dam in Ramu Upazila under Cox's Bazar District.

Under the package no. EMCRP/AF/W2

Development Design Consultants Ltd.

October 2023

ACRONYMS

BOQ	Bill of Quantities
CO	Community Organizer
DAE	Department of Agricultural Extension
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
ES	Environment and Social
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bricks
IEFs	Important Environmental Features
ICM	Integrated Crop Management
IPM	Integrated Pest Management
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SPM	Suspended Particulate Matter
SRDI	Soil Resources Development Institute
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TMP	Traffic Management Plan
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank
WMCA	Water Management Cooperative Association

Contents

Executive Summary 1
1 INTRODUCTION 3
1.1 Project Background 3
1.2 Objective of the Sub-Project 3
2 PUBLIC CONSULTATION AND PARTICIPATION 5
2.1 Methodology 5
2.2 Summary of Public Consultation Meeting 6
2.3 Suggestions and recommendations of the participants 6
3 ENVIRONMENTAL SCREENING 7
3.1 General 7
3.2 Major Findings 7
3.3 Climate Change Impact 9
3.3.1 General Consideration 9
3.3.2 Site Specific Consideration 9
4 ENVIRONMENTAL AND SOCIAL PROTECTION/SAFEGUARDS 10
4.1 Mitigation and Management Measures 10
4.2 Health and Safety Measures under COVID situation 10
4.3 Cost of Environmental Enhancement Works in BOQ 11
5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION 11
6 LIMITATIONS OF THIS STUDY ..... Error! Bookmark not defined.
7 CONCLUSIONS AND RECOMMENDATIONS 12

Appendix-1: Filled in Environmental Screening Form 13
Appendix-2: Environmental and Social Management Plan (ESMP) of this Sub project (site specific) 32
Appendix-3: Cost of Environmental Enhancement Works in BOQ 44
Appendix-4: List of Participants in the Consultation Meeting 48
Appendix-5: DO letter from the local Member of Parliament 50
Appendix-6: Formation of GRC committee 51
Appendix-7: Pictorial View of the Sub-Project sites 52

Executive Summary

The forcefully displacement of Rohingya population to Bangladesh has posed challenges for the district of Cox's bazar in terms of livelihood improvement and environmental services. To aid into the condition and improve the symbiotic relationship between the Host Community and Displaced Rohingya Population (DRP), different interventions are being taken place. Among those, Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) financed by the World Bank holds one of the objectives to provide improved communication network for all Upazilas under Cox's Bazar district. At the same time, the project is intended to unraveling the socio-economic potentials of local population.

Small rivers and canals hold lifelines of Cox's Bazar for food production and livelihood through surface water distribution or aquifer recharge and to aid into this endeavor, Rubber dam improvement has also become a part of this project's initiative. Local Government Engineering Department (LGED) as the implementing agency with D&SC (Development Design Consultants Limited-DDCL) has identified the Host Community or the local population as the key project beneficiary for this specific sub-project. With many of the project's activities, Identification of environmental and social components along with the assessment of impacts and opportunities in relation to the project interventions and ES Components, do might fall into bargain for improvement works, which is a fundamental motive. Therefore, screening and assessment of these elements have been adopted in accordance with the guidelines from World Bank; as a result, environmental and social screening reports have been produced along with worked out impact factors which are introduced with mitigation and management measures. In order to present a quick picturesque of the proposed sub-project, an overview is given hereunder.

The proposed 50m Boro Junchari Rubber Dam will be improved under the package EMCRP/AF/W2 with replacing the rubber bag of 50 m length, renovating part of the toe walls with CC blocks, establishing water pump motor and subsequently painting the foot bridge railing bar and railing post. Arranging power connection to the pump-house is also necessary for inflating the rubber bag, though this will be the responsibility of the respective Water Management Cooperative Association (WMCA) for functioning the system well.

The location is primarily situated in Boro Junchari village falling in Ward number 09 under Kocchopia union of Ramu Upazila. It is found to be an area on the most south-eastward of the upazila. The Junchari khal where this hydro-structure is placed feds into 1,000 hectors of irrigable land area falling under localities such as South Moulovir kata, Miajerpara, Komolarpara, Mastarpara, Bodpara, Shayrapara, Boro Dhepa, Hazirpara, Boro Jamchori Purbokul/ Poshchimkul, Tekpara Purbokul/ Poshchimkul, Kobirer Ghona, Najur Ghona, and Bagh Ghona placed across ward No. 07, 08 and 09, under Ramu Upazila of Cox's Bazar. This canal has its routes from three upstream locations including Jamchori canal, Jaruliatoli canal and Cherarkul canal which pours into the target water stream. There are some community property resources, environmental components and other features located within 1km from the sub project location, which are detailed out in this report. This rubber dam is a promising infrastructure which will ensure water use efficiency and command area efficiency of Ramu Upazila overall, also becoming an expedited development factor of the surrounding community. The location is found to have numerous environmental components and natural establishments which can be identified as a significant part of its surroundings. Since the geography is dictated with irrigable land covers and moderate coverage of trees and shrubs, it is given that any

establishment will need cautious implementation and focus on all impactful considerations during both construction and operation period.

The delineated area does not have sensitive vegetated cover immediately surrounding it. To be specific, the proposed location already has space for dam structure facilitating: rubber bag, anchorage, foundation, and pump house having room for improvement works and this sub-project is not located within any environmentally rich areas and has minimum chance to create adverse impacts to the modest environmental components from a construction point of view. No trees need cutting for this improvement work to take place. As part of the environmental enhancement works in the area, for instance, 10 numbers of trees will be planted around the vicinity of the target location for which sufficient budgeting has been planned for. In the period of dry season (December to April) dam is operational and water is reserved on the east side elevating the top water level for usage in irrigable lands, but flooding does not occur on the upstream side unless dam operations are followed during rainy seasons. There are no major impacts to environmental components other than construction phase water pollution and impacts on air due to dust generation from vehicles and the transportation of all types of construction materials. Noise emission from machineries and equipment can cause nuisance to local establishments. Contractors need to pay especial heed on running heavy vehicles and traffic congestion issue during the construction period.

In light of sustainable works, this location does not only contain ecological facets but also harbors socio-cultural or socio-economic infrastructures in the vicinity i.e., mosques and bazar-shops that may exclusively be impacted for a short period of time. This should make the contractor more cautious about maintaining all constituents of safeguard measures during the construction period, as it has a great religious, socio-economic and touristic value.

Since now it is apparent that the construction works will not generate significant amount of dust and air pollutants, or create noise, but have a potential to pollute surface water with construction materials. All these impacts are site-specific and manageable by mitigation or offsetting measures. Good management practices in labor camps, material storage areas, and in the areas of occupational health safety, and hazardous material management would suffice in curbing the potential pollution, hazards and any further risks related to construction works. Appendix 02 of this report has detailed out the mitigation measures within the scope of interventions associated with this sub-project.

Allocation of water quantity across the up-and-down stream areas and maintaining the quality of water during the operational period are very critical for successful operation of the facility, and where the WMCA's key responsibilities lie on. To this end, assessing the requirement and regulate water quantity in the downstream considering the climatic factors as well as the need for all the stakeholders, including the local fishermen along with sustenance of the aquatic habitats are very much necessary.

This sub-project has been proposed to ameliorate the socio-economic condition of the people living in the surrounding areas through offering improved irrigation management in turn developing lives of farmers and locals overall, through increased crop production, water accessibility and associated safeguard facilities. Since the dam is directly connected to a principal water stream, best practices is included in proposed implementation works for the enhancement of ecosystem services also promoting environmental conservation that are part of mitigating and offsetting measures that will be adopted with due care and diligence during all construction periods, the component should be taken undoubtedly in further consideration for development.

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 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 under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change effects.

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, including construction of drainage structures, rubber dams for irrigation, jetty rehabilitation, climate-resilient primary schools/disaster shelters, and climate-resilient community service centers/disaster shelters, climate-resilient access and evacuation roads and footpaths, construction of firefighting/search and rescue warehouses, as well as installing lightning protection systems, solar street lights, nano-grids, and building firefighting/search and rescue warehouses. 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).

1.2 Objective of the Sub-Project

With an overall target of uplifting the socio-economic condition of host communities of different Upazilas of Cox's Bazar district along with providing benefits to the associated stakeholders, additional financing to the Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been initiated to improve both the communication and service delivery system as such. This particular project is designed to improve the irrigation networks in some parts of Ramu upazila, also reflecting on the district level enhancements. Improvement of this rubber dam is proposed with a 50m long dam body with reinforcement rubber and some auxiliary works. Surely, this will be a key to revive the opportunities for increased irrigation capacity for Ramu Upazila. With the improvement of this dam, rural agriculture and economic capacity will be transforming rapidly. Wherever the

[1] ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)
[2] IOM Needs and Population Monitoring round 12 as of October 10, 2018

irrigation network is reinforced the rural economy and quality of life gets improved. This scenario comes in the bracket of rural infrastructure development, in particular, an important element in supporting farmer's economy and agriculture cycle by providing better access of irrigation inputs and other relevant services and trading facilities of goods.

The sub-project has the primary target to improve the irrigation facilities and water accessibility of the area. This intervention, without a doubt facilitates the following: it will,

- ✓ Support to agricultural output along with its cycles of farming till the commerce point of business.
- ✓ Support to manage and regulate drainage system in the face of excessive yielding of water flow in the catchment area and flood-risk to occur.
- ✓ Widen the participation of locals to the water management system.
- ✓ Provide irrigation benefits, drinking water and domestic water benefits etc.
- ✓ Land improvement benefits through an increase in the soil productivity because of drainage
- ✓ Create new aquatic environment that can support the arrival of different species to the area, boosting fish population in turn encouraging fishing.
- ✓ Make a crucial contribution to economic development and positive changes in the employment and production systems uplifting socio-economic status.

This document represents the findings from environmental screening of the sub-project under the package name **'Improvement of Boro Junchari Rubber Dam in Ramu Upazila under Cox's Bazar District'** with the bid package no. **EMCRP/AF/W2.**

Table 1.2.1: Significant features of the Sub-project

<table>
<tr><td colspan="3">Package No. EMCRP/AF/W2
Description of Sub-project: Improvement of Boro Junchari Rubber Dam in Ramu Upazila under Cox's Bazar District</td></tr>
<tr><td colspan="3">Sub-Project Location:
<table>
<tr><td colspan="3">i.ID. N/A</td></tr>
<tr><td colspan="3">ii. Ward and Union: 9 no. ward under Kacchapia union</td></tr>
<tr><td colspan="3">iii. Village: Boro Junchari</td></tr>
<tr><td>iv. Upazila: Ramu</td><td colspan="2">v. Sub-Project construction period: 1 year</td></tr>
<tr><td>vi. Construction Year: 2023-2024</td><td>vii. Width (m): 50m (Rubber length)</td><td>viii. Length(m):</td></tr>
<tr><td colspan="3">ix. Distance from UZHQ: 23 km</td></tr>
<tr><td>x) Location of Rubber Dam (GPS Coordinates)</td><td colspan="2">Latitude Value: N- 21.401722°
Longitude Value: E- 92.211971°</td></tr>
</table></td></tr>
<tr><td colspan="3">Subproject interventions:
The following structures of the proposed Baro Junchari rubber dam will be renovated by
• Replacement of Rubber Bag (50 Meters).
• Re-construction/renovation of Toe wall with CC Block.
• Arrangement of power connection to pump house for inflating rubber bags.
• Establish water Pump Motor.
• Paint color of foot bridge railing bar and railing post.</td></tr>
<tr><td colspan="3">Implementing Agency: Local Government Engineering Department (LGED)</td></tr>
<tr><td>Expected construction period: 1 year</td><td colspan="2">Estimated total cost of component: 1,92,34,490.0 (Tk.)</td></tr>
</table>

2 PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. ES team of D&SC conducted consultation meetings on 28 September 2022 with people from local communities, representatives from WMCA (Water Management Cooperative Association), and some other relevant stakeholders including farmers and fishermen, who reside or work in the vicinity. Consultation outcomes are pointed out in the following Table 2.1.1 as well as refer to Figure 2.1.1, and Public Consultation Participants' List is attached in Appendix-4 and sub-project pictorial overview is attached in Appendix-5. A questionnaire was kept ready, and responses were elicited. During these consultations, the communities were explained about the project, key interventions, benefits of the proposed components, associated social and environmental aspects, potential mitigation measures and the scope and structure of project GRM, among others. As operational period of the rubber dam was more critical than that of construction (improvement) period in terms of impact evaluation, management and mitigation, consultation with the WMCA representatives was quite fruitful in learning the management issues along with exchanging of views and measures responding different scenario or problems.

Table 2.1.1: Consultation Meetings Details

Venue/ Participants details	Outcomes and Remarks
Venue: Beside Boro Junchari Rubber Dam **Participants:** Male: 21 Female: 6	The local individuals i.e., UP Representatives, farmers, businessmen/traders, religious leaders, and fisherman incl. several representatives of WMCA participated in the consultation event. The cooperative members and community representatives pointed out that if this dam is reconstructed their life would be much easier and water fetching would also come by nearer for women in adjacent areas. Improvement of irrigation from this rubber dam will decrease cost of crop production by ensuring increased flow of water and decreased use of diesel at individual level for pumping out of underground water, and therefore, profit margin from robi (winter) crops will not be losing during the winter season. They suggested to not inflate the rubber bags during monsoon otherwise this inundates their lands close to the banks. Fishermen present in the meeting also suggested to not inflate the rubber fully during the dry season, so that certain amount of flow in the canal still exist during that time. Planning is required for water distribution and preparation to construct water inlets as it takes 25 days for the reserved water start passing to almost 1,000 hectare area of farmland.

Figure 2.1.1: Consultation meeting with the locals at the site of Junchari Rubber Dam

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

2.2 Summary of Public Consultation Meeting

In the consultation meeting, environmental issues and their relevant impacts for the infrastructure development works such as rubber dam improvement and maintenance were discussed. The advantages and disadvantages regarding the sub-project activities were also revealed. A successful public consultation programme requires the following three elements to be effectively executed (i) dissemination of information to the stakeholders (ii) solicitation of views and information from affected parties and inhabitants on social and environmental issues. (iii) Consultation with interest groups and the public.

D&S Consultants conducted consultation meetings with community people and other relevant stakeholders regarding the sub-project activities. Community representatives have no objection regarding the construction of the sub-project. Local people and stakeholders have welcomed the initiative as this small infrastructural intervention would contribute to the reviving of an existing water management subproject of small size, not exceeding 1000 hectare benefit area by the current definition, to resolve existing water management constraints to agriculture that in turn enhance rural employment leading to reduction of rural poverty. People will have more growth from agriculture practices which will surely bring development to their localities. Different parties of stakeholders have expressed similar verdict in favor of the improvements and portrayed this will be an answer to problems this farmer community has been facing. They were worried of facing any risks of whether this intervention may cause harm to their establishment of any kind. In reply they were assured that very low to no impact might accrue but the extent is very negligible and will not cause any major hindrance to their daily working or socio-economic life. Dust and noise pollution might occur only during the construction period, primarily by the construction materials and noise from admixture machine and vehicles. Discussion was also made on other potential hazards like soil and water pollution, primarily from the oils and paint products, including diesel as energy source, which are likely to take place during the improvement period, if proper measures are not followed.

It has been revealed that this project's scope of works does not intend to overtake the area of lodgment of any person and funding entity has no intention to do so. Moreover, other issues have also been brought to the attention such as proper placement facility for labors and storage facility for materials is a crucial factor. The participants expected that none of the interventions would worsen their living conditions or surrounding environment and they requested for adopting all measures to reduce/avoid the environmental hazards during the implementation phase. Participants were also informed of the structure and redressing procedure under project Grievance Redress Mechanism (GRM).

2.3 Suggestions and recommendations of the participants

The significant suggestions that came out during the meeting are given below:

- Slope protection should properly be established on the side of the dam.
- Best available measures should be adopted to avoid potential negative environmental impacts and enhance positive impacts.

- Participants' suggestions and expectations that came out through the different forms of consultation meetings should be taken into consideration to reflect their wishes and minimize the adverse impacts of improvement works.
- Community representatives highly suggested to prepare the downstream part with protection inputs in mind so that while releasing overflow this east west section is not overwhelmed and experience flooding.
- During dry periods, water levels are asked to be maintained from time to time by lowering rubber bag heights to ensure water flow and sediment deposition on the lower section.
- Steps should be taken for minimizing the air pollution by spraying water at the construction sites, though it is too minimal.
- Every possible measure should be taken to avoid any nuisance to public and surrounding inhabitants.

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.

To realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area regarding the implementation measures Environmental Screening form, as adopted in **Appendix 2** of the Environmental and Social Management Framework of EMCRP, was administered and this will help identifying the impacts and their extents. The screening data and information for this Sub-project component and details screening summary have been formulated and shown in **Appendix-1.**

3.2 Major Findings

The proposed improvement of the dam is targeted in the Boro Junchari village that falls under Kacchapia union of Ramu Upazila. The hydro-structure is located on the Boro Junchari khal that built from three upstream locations including Junchori canal, Jaruliatoli canal and Cherarkul canal coming in from border lines finally meeting into Dakkhali river on the east of the Upazila. This Junchori khal stretches around 10 km from the point of Kombonia GPS point to the Dakkhali river feeding almost 1000 hectors of farmland in the catchment area. The area surrounding the dam structure has (as mentioned) mostly farmlands along with moderate vegetation covers mostly bamboo bushes and some vegetable gardens. This location is not hosting any sensitive ecological area that may come in harm's way. The canal itself on which the dam is rested is only concern regarding protection. Aquatic habitats are also present of the surroundings that include a canal itself to the west and east. To consider grounds of the surrounding location it is mainly on clay, silt where on the better part of the top side the soil can be identified as mostly clay and in lower portions it is mostly silty.

No alteration is expected of topsoil in this target location due to improvements works and the target is to reestablish the rubber dam and slope preparation. Also, the footprint area of the project component is accounted to be 500 square meters which is not hosting any trees. However, as part of

environmental enhancement works in the area, 10 nos. of trees will be planted on the sides of the dam slop area and sufficient budgeting has been planned for. Impacts on air quality during the construction phase may turn little disturbing, especially in dry season. In fact, the main impacts include dust generation from vehicles and the transportation of all types of construction materials. Noise emission from construction machineries and equipment can cause nuisance to residents, workers, and faunal species in the forested lands. Thus, the ambient noise level might have potential to increase temporarily and intermittently in the close vicinity of active construction fronts. Water quality of the canal may deteriorate if oil/lubricants or paints find their way to the water body. Having a pre-existing establishment from previous interventions the newly proposed works will be limited as a result, it will pose less impacts. The downstream may face changes in water distribution but this can be adjusted by planning endeavors of present cooperatives for water management. With active participation of local farmers and fishermen, the water distribution can be allocated with water supply systems that can drain water towards downstream farmlands for irrigation as well as support system for fishing grounds. Overall, correct considerations are made through identifying sensitive components and avoid immediacy of interest it can result in fruitful accomplishments. Along with nature and environment there are Socio-economic and religious establishments and features which are within proximity of the intended location.

During the survey conducted by the D&S safeguards team, many socio-economic and religious features were identified as well. Among those different socio-economic features, no historical sites were identified, but several mosques, ponds, graveyards, households, educational institutes, and Bazar area were present in the vicinity. For instance, at the north side, there are South Moulovir kata Nurani Talimul Quran Madrassa (70m), Darul Quran Mohila Hafizia Madrassa (100m), South Moulovirkata Mosque (200m), South Moulovir kata Mohammodia Moaque (400m), Darul Quran Madrassa (250m), Tekpara Mosque (900m), Boro Jamchori Water management co-operative association (900m), Al Gigri Adarsha Dakhil Madrassa/ Graveyard/Mosque (1km); at the west side, there are Abu Taleb's pond (1km SW), Al kaderia mosque (600m), Al Qaderia Maktab (610m), Baitun nur jame Mosque (1km), Najurghona Moktab (1km), Tekpara River's west Moktab (900m), Learning Center (1km); at the east side, there are Boro Dheba Moktab, Boro Dheba hill (1km); at the south side, there are South Moulovir kata graveyard (500m), Hayatun Nabi (pbuh) Tahafizul Quran Hifol Madrassa (510m) located. However, no scope of disturbance (head-on impacts) is anticipated to most of these components by the sub-project activities. Most of the components (as mentioned surrounding features) will not receive any impacts for being in faraway proximity moreover the work type will not dictate as such.

Some features may face dust, noise, and runoff pollution due to having a closer proximity to the proposed dam, but the impacts are short-term, site-specific within a relatively small area and reversible/ preventable by mitigation or conservative measures. However, strict construction site management system including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials, etc.- all these measures will be complied fully in the field. 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.

To offset the loss or attenuating the environmental degradation and ensuring community safety, a set of mitigation/management 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

3.3.1 General Consideration

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 or soil structure, not of any rocky formation and the stability comes from the roots of the trees. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, the vigorous monsoons make the area prone to landslides, and there is always the lurking threat of cyclones and thunderstorm across the area.

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 and construction of drainage facilities in optimum numbers with wide opening, along the road length have been suggested and will be implemented under this project (though not under this package).

3.3.2 Site Specific Consideration

The sub-project area is not adjacent to the sea. The cyclone has higher impact in the area and intensity of precipitation has been seen to have increased in the past few years. Salinity and the occurrence of cyclonic storm surge were not reported in the vicinity of the subproject. Temperature was reported to be increased and Thunderstorm is found to have highest impact in the area. Thunder storm has been observed creating more damage than before but no casualty was reported.

Site specific climate change impacts are often not so easy to measure or deduce plausibly while the site is confined to a width of canal only, and associated mitigation or offsetting measures are really hard to plot on the same tiny impact areas, though an overall set of measures are often considered in practical aspect. Tree planation on the slope is suggested to sooth the temperature effect and increase the water retaining capacity of soil, at the same time. In addition, height of the toe wall and CC block shall be increased considering the likely high intensity of precipitation and associated high tide/flow of water.

[3] https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf

4 ENVIRONMENTAL AND SOCIAL PROTECTION/SAFEGUARDS

4.1 Mitigation and Management Measures

Considering the environmental condition, 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. As discussed, the proposed dam is in-between the canal standing on the eastern side of Ramu Upazila. The adjoining aquatic wildlife habitats of the construction area may face temporary physico-chemical changes due to water quality deterioration induced by impacts of construction.

Further, some settlements located adjacent to the sub-project area may face little nuisance during the construction period with the generated debris and dust, though for the time being and of very limited nature. Contractor must adhere to the best practice debris management procedure (debris should be accumulated in a specific place, away from the pathway and waterbodies, and later be carried away and dumped to designated waste dumping area), regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the level best.

As traffic and community safety may pose a bit concern during the construction period, the contractor should draw up a comprehensive traffic management plan. It is anticipated from previous experiences in the construction works of similar project under LGED, contractor would implement the entire works in different phases with completing the works of Toe Wall with CC block, managing power sources in the first phase, replacement of rubber in a single go after making all preparation, and thereafter paint the foot bridge and railing bar/post. Placing cautionary notice of construction works at suitable places for the canal users and people living in the vicinity is a must to adopt. During the painting, wooden docks should be attached to outer side of the railing bar/post, so that color/paints doesn't spill into the canal water, painters must use nose-covered-masks to avoid the direct smell from the paints. 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. Once the effects are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the local communities.

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

4.2 Health and Safety Measures under COVID situation

As the situation is now being normalized in Bangladesh and World Health Organization (WHO) has lifted the Public Health emergency of International Concern (PHEIC) for COVID-19 on May 05, 2023, contractor is still required to keep an eye on the situation in his working sites and associated facilities following the line of directives:

a. All workers, supervising and supporting engineers and staffs, and other concerned parties must adhere to the personal health and hygiene rules with utmost care in order to protect themselves and contain the infections, if recurs, any further.
b. 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.

The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3 (if required, as contingency budget), considering the country-specific current situation, capacities, and scope of interventions.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Provision for engaging a Safeguard Personnel responsible for ensuring Environmental and Social Management works for the Work Package EMCRP/AF/W2 has also been added in the BOQ. An allocation for some environmental enhancement works such as tree plantation and dust Suppression is included in the ESMP budget. Moreover, in order to ensure health safety and sanitary measures of workers by providing labor shed, PPEs, First Aid Box, drinking water facility, temporary but separate latrine for male and female workers as well as waste disposal systems necessary budgetary allocation is provisioned. As the workforce at site need to be sensitized on environmental and social performance issues, motivational training on environmental and social considerations has been taken into account. An overview of the estimation is given in **Appendix-3**.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

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

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities. 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 because of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g., drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

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

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

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

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

6 CONCLUSIONS AND RECOMMENDATIONS

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

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

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

Implementation of this Sub-project will have large positive impacts to the communities in terms of ensuring economic gains from boosting agricultural and fish productions and emergency flooding situations, which would eventually uplift the socio-economic condition of the people living in the catchment areas. Direct economic benefits from the engagement in different capacities during the construction period will also put some positive effects to the nearby community people. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.

Appendix-1: Filled in Environmental Screening Form

Environmental Screening Form

Sub-Project Description Form:

Name of Sub-Project: **'Improvement of Boro Junchari Rubber Dam in Ramu Upazila under Cox's Bazar District'** with the bid package no. **EMCRP/AF/W2.**
Name of the component: For Improvement of Boro Junchari Rubber Dam in Ramu Upazila under Cox's Bazar District.
Implementing Agency/Agencies: Local Government Engineering Department (LGED)
Estimated total cost of the component (in Taka): **1,92,34,490.0 Tk.**
Estimated construction period duration: 1 year
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 the areas.

District: Cox's Bazar **Sub-District**: Ramu **Union**: Kacchapia **Ward:** 09
Name of Community/Local Area: Boro Junchari area

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The Sub-Project is an infrastructure development project with a proposed improvement of Boro Junchari rubber dam at Ramu Upazila with a length of 50m on the Junchari canal.
The following structures of the proposed Baro Junchari rubber dam will be renovated:

- Replacement of Rubber Bag (50 Meters) of Baro Junchari rubber dam.
- Toe Wall with CC Block of Baro Junchari Rubber Dam.
- Arrangement of power connection to pump house for inflating rubber bags of Boro Junchari rubber dam.
- Establish water Pump Motor.
- Paint color of foot bridge railing bar and railing post of Baro Junchari Rubber Dam.

Moreover, as part of road safety works and Environmental Mitigation and Enhancement works are included in the estimation.
Estimated footprint / land area for this sub-project is 500 sq m.

Brief description of sub-project site: (e.g., present land use, Important Environmental Features (IEFs) near site, etc.:
This proposed rubber dam belongs to Kacchapia union of Ramu Upazila. This target location is primarily situated in Boro Junchari area under this union on the south-east part of the Upazila. There is an existing dam that is not in use by the cooperative association of this community since it is unfit having no functional rubber bags for execution. Few household structures were found on the surrounding the location but farmland in terms of land use is prevalent. Other than this there are not many socio-economic structures around the site and few patches of vegetation were found. These are partially naturally grown.

Primarily this area falls within government lands and acts as a significant surface water source to this entire sub-district for irrigation and other usage. This targeted sub-project is not passing through any social or economic institutions other than the canal which it stands upon. The 50m long dam sits on the north-south cross section of the canal having upstream on the east side and downstream on west. An existing pump house is on the north to the dam, and it is surrounded by farmlands.

Figure: Location of Boro Junchari rubber dam in Ramu Upazila

Overall Comments

The proposed component of the sub-project (Improvement of dam) is located on the most south-eastern part of Ramu on the Junchari canal surrounded by farmlands which are away from this target location. This newly considered development will be placed on this canal. No number of trees is to be scooped for this construction to take place other than water quality compromises for short period of time. Moreover, the downstream is face changes in water distribution but this can be adjusted by the participation of present cooperatives for water management. On the other hand, the aquatic habitat might face challenge from the improvement works in the cannel through alteration of the primitiveness i.e., aquatic fauna especially fish population.

During all phases of construction appropriate offsetting measures to be taken keeping these attributes in consideration specially water quality. Provision for additional numbers of trees to be planted in the surrounding area are kept in planning and budgeting as part of enhancement works. No agricultural productive soil will be used for this improvement works. To minimize the risk of potential sliding or extensive erosion of soil mass, earth will be compacted for stabilization and necessary cut and fill operation along the slope of the banks close to the dam is to be ensured. All these inputs will be mainly at construction phase and limited within project boundary. Further mitigation measures will be taken according to the ESMP for minimizing the air, dust and noise pollution.

It has been revealed during the consultation session with local stakeholders that this project's scope of works does not intend to overtake any area of physical lodgment and funding entity has no intention to do so.

Local 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. They truly appreciated the initiative as they will have better irrigation system regardless of weather conditions during dry seasons to facilitate yield and crop protection, and they would be able to harness the full socio-economic benefits. Nevertheless, expected discrepancy on water quality, due to the improvement of the sub project component will have to be effectively ameliorated.

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 unused plastics, tin, bamboo, wood etc. Negligible amount of fuel etc., will be generated in equipment/stack yards. Human wastes may be generated in labor camp, though it's highly unlikely

that foreign labors need to engage and labor shed needs to construct. Dust and noise are among the nuisance that may generate during construction 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. There are some community properties, environmental-religious-and-sociocultural components located within 1 km from the sub project, which are quoted here. This list is not exhaustive, but includes prime features and distances given in parenthesis are from the midpoint of the dam. At the north side, there are South Moulovir kata Nurani Talimul Quran Madrassa (70m), Darul Quran Mohila Hafiz Madrassa (100m), South Moulovirkata Mosque (200m), South Moulovir kata Mohammodia Moaque (400m), Darul Quran Madrassa (250m), Tekpara Mosque (900m), Boro Jamchori Water management co-operative association (900m), Al Gigri Adarsha Dakhil Madrassa/ Graveyard/Mosque (1km); at the west side, there are Abu Taleb's pond (1km SW), Al kaderia mosque (600m), Al Qaderia Maktab (610m), Baitun nur jame Mosque (1km), Najurghona Moktab (1km), Tekpara River's west Moktab (900m), Learning Center (1km); at the east side, there are Boro Dheba Moktab, Boro Dheba hill (1km); at the south side, there are South Moulovir kata graveyard (500m), Hayatun Nabi (pbuh) Tahafizul Quran Hifol Madrassa (510m) located. In this sub-project area, no elephant migration routes exist (ref. IUCN).

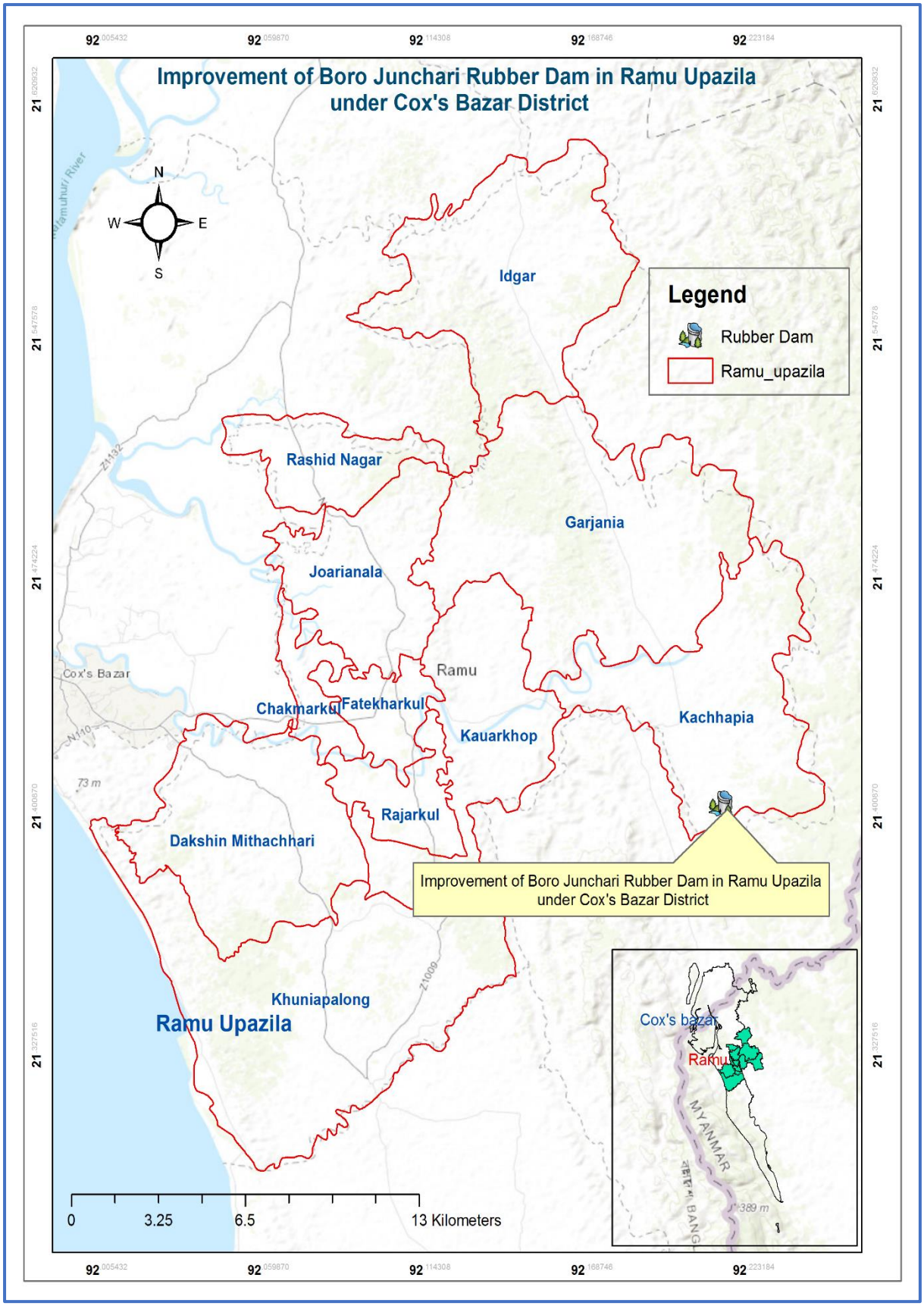


Figure 3: Upazila Map with project location

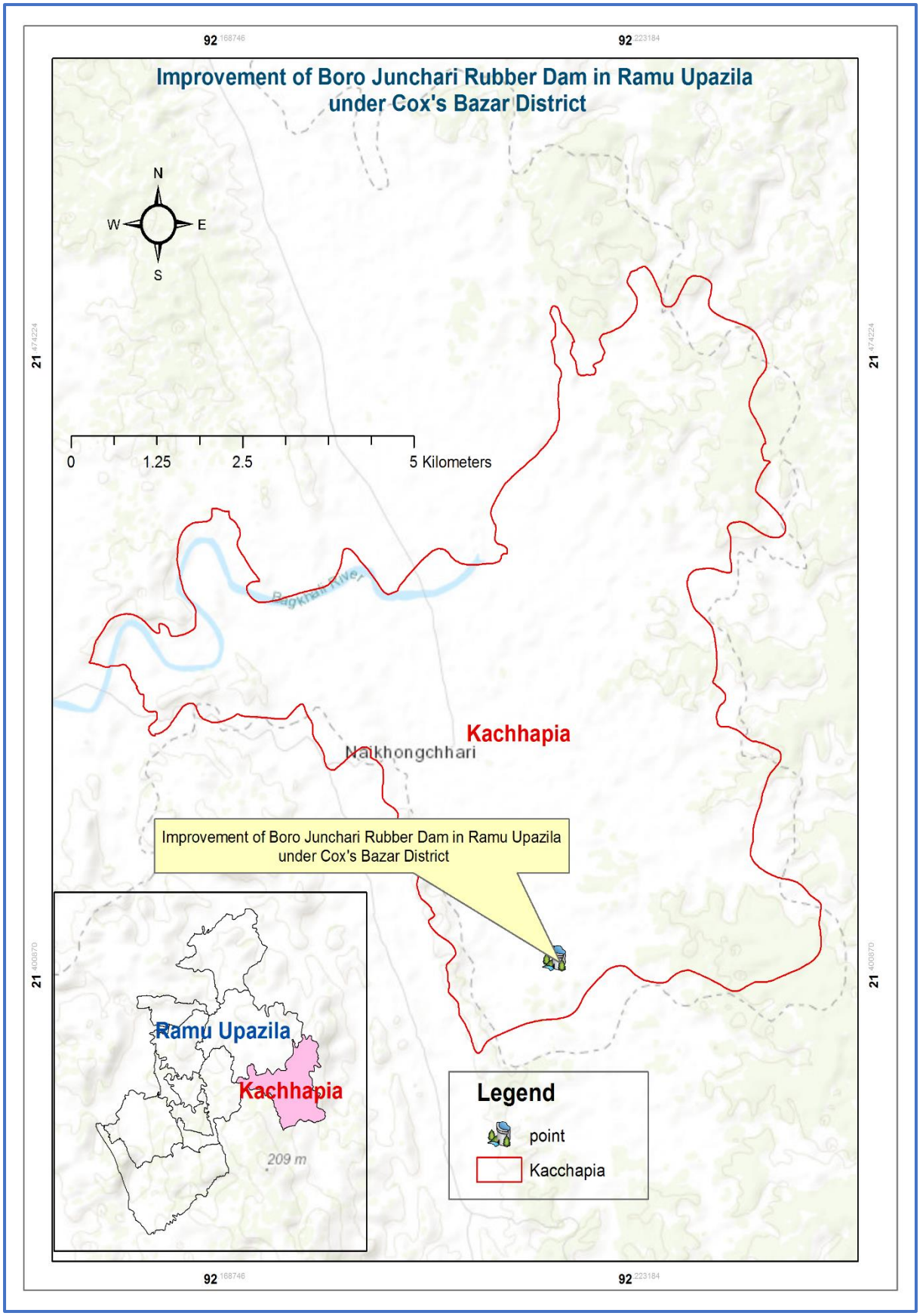


Figure 4: Union Map with Sub-project location

Section A: Sub-Project Overview

Description of sub-project/component interventions:

The Sub-Project is proposed with a 50-meter-long rubber bag which will be replaced along the north-south section on the Junchari canal.

The following structures of the proposed Baro Junchari rubber dam will be renovated by

- ✓ Replacement of Rubber Bag (50 Meters) of Baro Junchari rubber dam.
- ✓ Toe Wall with CC Block of Baro Junchari Rubber Dam.
- ✓ Arrangement of power connection to pump house for inflating rubber bags of Baro Junchari rubber dam.
- ✓ Establish water Pump Motor.
- ✓ Paint color of foot bridge railing bar and railing post of Baro Junchari Rubber Dam.

Moreover, as part of road safety works and Environmental Mitigation and Enhancement works are included in the estimation.

Sub-project Location:

Important Features	
District	Cox's Bazar
Upazila	Ramu
Union	Kacchapia
WARD	09
Proposed length	50m
Proposed Intervention Type	Rubber Dam Improvement
Location of Dam	Latitude Value: 21.401722°N Longitude Value: 92.211971°E

Land ownership

Land area covering the length is owned by the Government.

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 Sub-Project is categorized as a dam improvement with a proposed design of 50m length.

i) Water body like Junchari canal where the dam is located.

ii) No historical sites were identified, but several mosques, madrasah, graveyards, and educational institutes were present in the vicinity.

iii) Not required to relocate local community.

iv) No chance of losing agricultural lands.

v) Environmental Sensitivity: Ponds and patches of vegetation coverage are located within very close proximity, which may contain rich bio/ecological niches that will not be affected by the construction activities. As mentioned, the canal is likely to take in pollutants from the waste generated by the development works. No elephant corridor was identified in this area. Improvement induced impacts will be very low. However, a well-planned ESMP has been prepared to follow in the field.

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 some community properties, environmental, religious, and socio-cultural components located within 1km from the sub project, at the north side, there are South Moulovir kata Nurani Talimul Quran Madrassa (70m), Darul Quran Mohila Hafiz Madrassa (100m), South Moulovirkata Mosque (200m), South Moulovir kata Mohammodia Moaque (400m), Darul Quran Madrassa (250m), Tekpara Mosque (900m), Boro Jamchori Water management co-operative association (900m), Al Gigri Adarsha Dakhil Madrassa/ Graveyard/Mosque (1km); at the west side, there are Abu Taleb's pond (1km SW), Al kaderia mosque (600m), Al Qaderia Maktab (610m), Baitun nur jame Mosque (1km), Najurghona Moktab (1km), Tekpara River's west Moktab (900m), Learning Center (1km); at the east side, there are Boro Dheba Moktab, Boro Dheba hill (1km); at the south side, there are South Moulovir kata graveyard (500m), Hayatun Nabi (pbuh) Tahafizul Quran Hifol Madrassa (510m) located.

Besides these components, no other sensitive environmental, cultural, archaeological sites including elephant migration routes were identified.

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

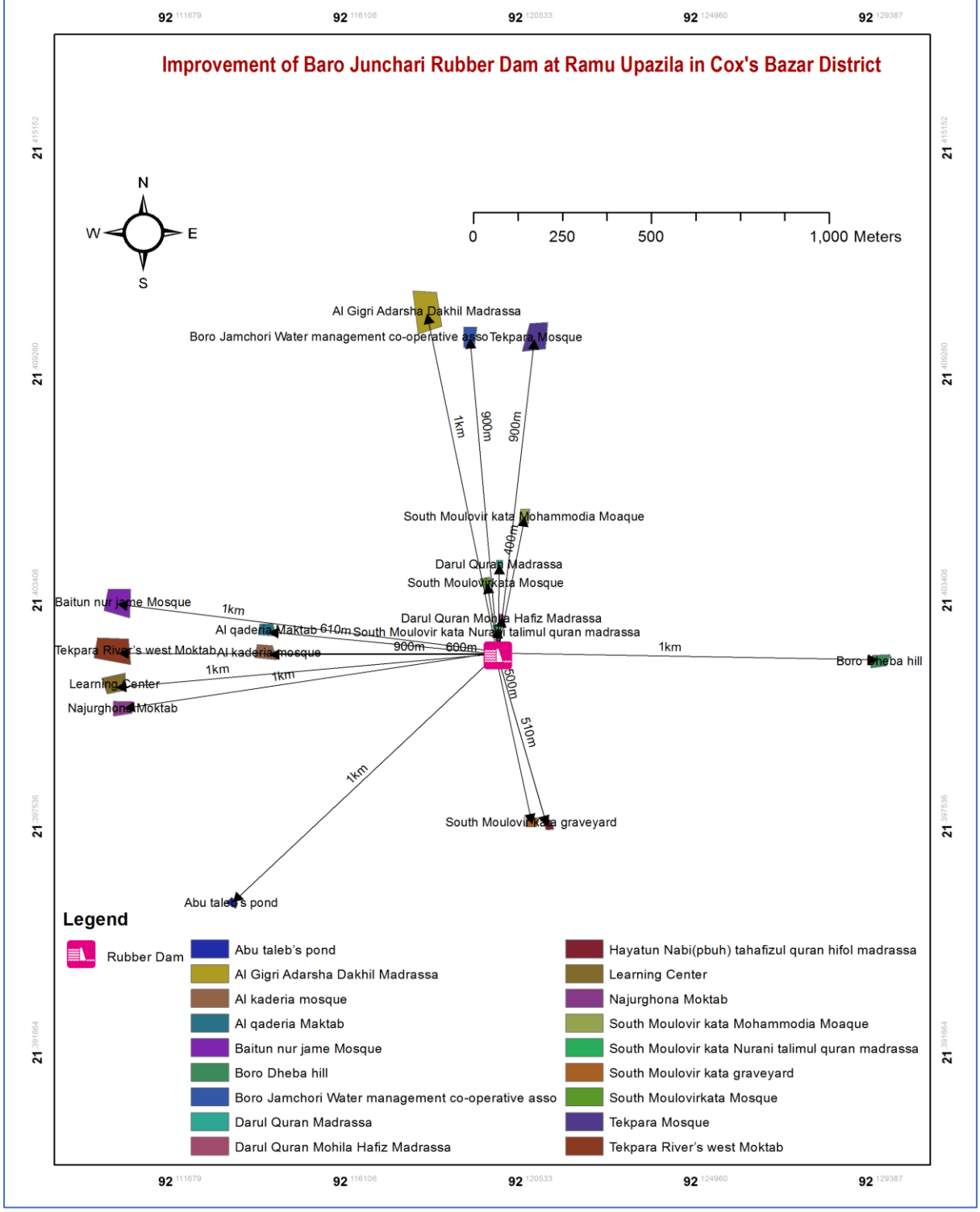


Figure B.1.1: A sketch of the project intervention area with major features

Location of environmentally important and sensitive areas:

The target area is south east area of the Upazila holding position on the Junchari canal. Here, not many environmentally sensitive elements are found other than the canal itself. There are some vegetation coverage on the north and south of the location but away from the intervention area. Mostly, farmlands are found surrounding the location and the canal sourcing from the east flows towards north-west to meet into Bakkhali River around 10 km away from this target location. These farmlands are supported by this waterway for irrigation as well as domestic usage. None of these

items will be in any sort of contact by the intervention other than few community structures such as mosques, madrasah, graveyards, school and human settlement that were found during the survey but mostly from dust for material carrying vehicle movement. Necessary preventive and mitigation measures will be followed during the entire construction period. Also, counterpoising the prior impacts will be on top of the list of actions for mitigating measures taken for this sub-project.

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

No. There is no existence of Elephant corridor/ route now, which has 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) and was further confirmed by the stakeholders presented in the consultation meeting.

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

No. There are no forest coverage in that location that can be harmed by this improvement works. However, for slope correction on the sides of the bank of the canal some bush clearing maybe needed.

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

Baseline air quality and noise levels:

Ascertaining distinctively the baseline air and noise quality level in respect to any sites at different parts of Cox's Bazar district is nearly impossible because of the huge burden of physical developmental works including roads, bridges, culverts, building structures, markets, jetties, etc. being carried out simultaneously across the areas. Therefore, the apparent baseline of the pre-development period can only be anticipated, and results of visual observation are worth to be presented here.

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

Noise:

Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit.

Baseline soil quality:

The sub-project area is located mainly on clay and silt soil. The topsoil is predominantly clay and as depth increases its silty. Being under an active floodplain land surface is developed from natural sedimentation developing from the weathered of the nearby border lands. Presence of Organic matter content in the soil is high. However, soil quality is not a direct factor to consider in our active intervention area.

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

Landslide potential is moderate. There is some possibility of soil erosion or landslide during construction period of targeted sub-project. However, this action can be accounted as natural in an active floodplain. The slope protection work is targeted to fight erosion on the east sides of the dam. During rainy seasons of the construction, work plans must consider safety management to keep clear of damage of any sort. These impacts are on a short window and 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 in between 100-220ft and deep tubewell depth ranges about 440-650 ft in the area (Field survey, 2022). In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Water from the shallower aquifers beneath the Sub-project area contains high concentration of iron. Local people usually use deep tube-well water for drinking and other domestic purposes although they moderately use surface water for the latter as well. Groundwater quality: pH-5.00 to 8.50, DO-2.37 to 8.14mg/l, TDS-32.40 to 350 mg/l, EC -30.0 to 685µs/cm, Fe-0.9 to 7.0 mg/l and As-Nil. *Data source: DPHE Result Report, 2022
Status of wildlife movement: Participants from the consultation informed that some types of wildlife are present across the areas, such as jackals, snakes, moorfowls, birds, frogs, etc.
State of forestation: Patches of vegetation containing large and matured trees are found surrounding the area and sides of the Junchari canal, but not close to the construction site (to be affected).
Summary of water balance analysis (For water supply scheme only): N/A

B.2: Pre construction Phase

Information on Ancillary Facilities (e.g., status of access road or any other facility required for sub-project to be viable): A 10ft wide HBB Shah Suja Road is available for access and transportation of materials
Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction: Electricity is available and rest water and toilet facility must be arranged by the contractors. This can be discussed with FRE for best adaptation.
Possible location of labor camps: Labor camp can be established near the project site and space is available. This improvement works will need technical workforce who can reside close to the project site.
Requirement and type of raw materials (e.g., sand, stone, wood, etc.): i) Bricks ii) bamboo, iii) Tin, iv) water, and v) wood are the most common type of materials used for the construction of labor shed and site office during the pre-construction stage.
Identification of access road for transportation (Yes/No): Yes. 10ft wide HBB Shah Suja Road is available for transportation. Pickup, trucks, dumper trucks could be used as material transportation vehicles. Manual head load from unloading point to different locations can be done.
Location identification for raw material storage: Best option for raw material storage is any sufficiently available space next to where the labor camp or the site office will be erected. However, this will need to arrange an open field and should be consulted with local communities.
Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.): Earth/ mud and plastics can be found during pre-construction time which can be identified as solid wastes. Also, remnants of tin and other leftover pre-construction materials can be found after the construction of labor camp, latrines and kitchen. Some salvage materials from slope excavation may be generated. 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 8 kg during the pre-construction phase.

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 may 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 wires, cement, brick-chips, fabrics left over and other construction debris, etc. And the overall quantity will be tentatively 30 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) water, v) Rubber textile bags are the most common type of raw materials to be used in construction period. **Quantity**: It is difficult to give exact figures of construction waste produced on a typical construction site.
Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards: Not applicable for this work.
Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation) No possibilities of stagnation of water are anticipated.
Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description) The improvement works is situated on the Junchari canal where an existing dam facility is present. This improvement works (installing new rubber textile bags for the dam) will not tweak current pathway of the existing water body. However, proper mitigation and preventive measures must be put in place to avert impacts if any.
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 the existing dam location on the Junchari canal where Rubber textile bags will be installed to this dam structure and predefined slope area will be refined by CC blocks. No part of the biota will be harmed directly or indirectly in the process. Only water surface tension may be disturbed for a short period of time.
Activities that can lead to landslides, slumps, slips and other mass movements in road cuts: Construction activities such as cut-and-fill operations, slope stabilization or any mechanical operations that follow a faulty or incomplete operational procedure may lead to small scale landslides or mass movement in canal bank area where slope protection work is targeted as well. The impacts are negative but short term, site specific within a relatively small area and manageable by mitigation measures.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description) N/A
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: No traffic movement 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: The dam is not in any location that its daily activities would affect adjacent vegetation.
Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description) Not applicable.
Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description) Not applicable.
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: Improvement of this project will substantially contribute to the development of the sub-district. It surely improves the irrigation facility regardless of water shortage during dry seasons, reduces water saturation time for farmlands prompting increase in crop production and business and ensures food security. Not to mention increased potency of optimized time that will translate into higher economic returns. Thus, the direct and indirect impacts on economic and social development in the project areas would be enormous by this sub-project.
Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description) Activities from the dam will hold water on the west side(upstream) of the existing canal and holding off water availability for downstream on the north and north-east side. This will not modify channel flow however buoyancy will change. Well, this will be experienced during dry seasons mostly.
Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description) Low. The aquatic habitat of this canal may suffer on the downstream having less water flow and fish distribution may change. However, this impact will have a window only on the dry seasons, and shall be minimized by regulating the water quantity to let passing downstream. This management decision has to be taken prudently in consultation with all stakeholders in the catchment areas.
Activities leading to landslides, slumps, slips and other mass movements in road cuts: Not applicable.
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: This improvement will not cause any impact on traffic movement and relevant aspects of such.

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

Section D: Environmental Screening Summary

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	
					Indicator	Frequency
1: Sub-Project Interventions	**Air quality**	Under the subproject intervention the overall score is **low**.	• Limiting earthworks; • Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; • Requiring trucks delivering aggregates or bricks and cement to have tarpaulin cover and Limiting speed of construction vehicles in access roads and work sites to maximum of 20 kph.	Construction Contractor monitored by Consultant and PIU	• Location of stockpiles; • Number of complaints from stakeholders; • Covering of trucks; • Records of air quality inspection	Visual monitoring of air quality and if requires, air quality test (CO, $PM_{2.5,10}$) once in construction period in winter season.
	Soil impacts	Under the sub-project intervention the overall score is **low.**	• 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	Construction Contractor monitored by Consultant and PIU	• No visible degradation to nearby drainages, • *khals (canals)* or water bodies due to soil erosion. • Rain storms in construction phase.	Monitoring on weekly basis.

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicator	Frequency
			and construction yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. • Slope stabilization shall be carried out step by step following proper operational procedures.			
	Hydrology (surface and groundwater)	Under the subproject intervention the overall score is **low**.	• All precautions to store chemicals/oil/fuel properly so that no chance of spill. • Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. • Monitor water quality according to the environmental management plan.	Construction Contractor and monitored by Consultant and PIU	• Areas for stockpiles, storage of fuels and lubricants and waste materials; • Records of water quality inspection; Water Quality Test • (National Drinking Water Quality Standard Parameters)if requires; • No visible degradation to nearby drainages, *khals (canals)* or water bodies due to construction activities. • Records should	Water quality test (mainly GW) twice during the construction period in six months interval.

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicator	Frequency
					be kept and logged.	
2: Pre-construction Phase	**Sanitation, water supply**	Under the subproject intervention the overall score is **low**.	• Provide suitable housing, adequate supplies of potable water, and toilet and bathing facilities within labor camp area for the assigned laborer. • Provide means for disposing of wastewater from toilets, baths and food preparation areas either through a septic tank and soak away, or holding tank with removal by vacuum truck. • Records for any type of training or awareness building sessions must be kept at site.	Construction Contractor and monitored by Consultant and PIU	• Site-specific H&S Plan; • Records of supply of uncontaminated water; • Record of Health &Safety orientation trainings; • Condition of sanitation facilities for workers	Visual inspection by PIU and supervision consultants on monthly basis
	Transportation	Under the subproject intervention the overall score is **low.**	• Contractor should verify vehicles for the suitability of carrying, loading and unloading of materials	Construction Contractor and monitored by Consultant and PIU	• Record of regular inspection. • Record of accidents/incidents.	Monthly monitoring.
	Storage of construction materials	Under the subproject intervention the overall score is **low**.	• Train concerned person and team assigned for the construction work to ensure items are stored properly and away from steep slopes.	Construction Contractor and monitored by Consultant and PIU	• List of materials and sources of materials	During implementation phase, as necessary through discussion with PIU, Consultant
3: Construct	**Wastes**	Under the sub-project	• Prepare and implement labor camp waste management plan approved by	Construction Contractor and	• Complaints from community;	weekly as work progresses

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicator	Frequency
ion Phase		intervention the overall score is **low.**	PIU and consultants. • Wastes must be placed in the designated bins which must be regularly emptied. These shall remain within demarcated areas and shall be designed to prevent wastes from being blown out by wind. • All waste must be removed from the site and transported to a disposal site.	monitored by Consultant and PIU	• Regular inspection of waste management activity; • Waste disposal record.	
	Storage of materials	Protected and safety storage to be needed for construction materials storage. Not interrupt natural land contours, disturbance in natural drainage patterns and logging of water and the overall score is **low.**	With the assistance from local stakeholders and LGED officials, respective E-I-C will identify the storage site and other requirements, which will be approved by PIU and consultants. However, following sets of requirements shall be taken into consideration: • Storage area will be sufficiently spacious so that unloading works can be performed inside the area and materials must not be rest on road side, near the water bodies, or trees and bushes, and will not be located in any crowded place. • Storage area must be well fenced with guard posted at the entrance and at least 30 m distant from any water bodies. • Construction materials must not interrupt land contours, natural drainage pattern, and create water	Construction Contractor and monitored by Consultant and PIU	• List of materials and sources of materials; • Storage areas for materials and equipment.	Monthly basis during implementation phase, as necessary through the discussion with PIU, Consultant

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicator	Frequency
			logging or depression. • Cement, sand, reinforced bars, stone chips, aggregates etc. must be covered with tarpaulins, and end of reinforced bars will be capped with plastic caps or covered with sacks/clothes to avoid any health injury. • Chemicals and hazardous materials including oil, grease, bitumen, etc. shall be kept in a Cement concrete bunded area or on wooden stage covered with polythene/tarpaulin.			
	Removal of Vegetation (May cause soil erosion and their deposition on nearby crop field, affecting soil quality and productivity)	Under the sub-project intervention, the overall score is **low.**	• If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. • Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&S.	• Complaints from community	Daily
	Noise pollution	Under the subproject intervention the overall score is **low.**	• Consultation with affected people; not to operate noisy equipment during working period; • No noisy work after 5.00 pm. • Sound suppression for equipment; • Ear protection for workers. • Conduct noise quality monitoring as per ESMP.	Construction Contractor and monitored by Consultant and PIU	• Number of complaints from stakeholders; • Use of silencers in noise-producing equipment and sound barriers; • Noise Level	Inspection by PIU and supervision consultants on monthly basis;

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicator	Frequency
					following decibel meter (dB), if required.	
	Air pollution	Under the subproject intervention the overall score is **low.**	• Water spraying for dust control; construction materials with potential for significant dust generation shall be covered; no smoke emitting equipment; and limiting speed of construction vehicles in access roads and work sites to maximum of 20 kph.	Construction Contractor and monitored by Consultant and PIU	• Location of stockpiles; • Number of complaints from stakeholders; • Records of air quality inspection.	Visual observation and monitoring of air quality during construction period.
	Road Safety and Accidents	Under the subproject intervention the overall score is **medium.**	• Erection of suitable signage at construction sites • Direct observation and discussion with local people • Restrict the transport of oversize loads. • Operate construction vehicles to non-peak periods (night) to minimize the traffic disruption. • Enforce on-site and access road speed limits. • The contractor shall provide, erect and maintain informatory/safety signs written in local language, wherever required or as suggested by the Environmental Specialist of D&SC. • Local residents should be kept informed about planned Works.	Construction Contractor, environmental specialist of D&SC.	• Complaints from communities, pedestrians	Day basis during work time

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicator	Frequency
4. Post Construction	**Tree plantation**	Under the issue the overall score is **low**.	• Plantation of trees during monsoon period • Maintain of trees properly • Check survival of trees and replant the dead trees	Construction Contractor, environmental specialist of D&S.	• Number of complaints from stakeholders; • Records of trees number and tree plantation inspection.	Immediately after the construction work is over.
5. Operational Phase	**Allocation of water quantity in streams to free-flow** (Dearth of water quantity through the downside of the canal during the dry season may cause serious impacts on the economic, ecological and social arena in the project catchment area)	Under the issue the overall score is **moderate**.	• Regular meeting among the members of the WMCA to follow up the quality and quantity of water, sediments (if required) and social issues around the project catchment areas, as well as the prudent distribution of water across the farmlands. • Assess the requirement and regulate water quantity in the downstream considering the climatic factors as well as the need for the local fishermen along with sustenance of the aquatic habitats. • Identify and evaluate the requirement of water-borne communication system through the canal, and ensure unhindered open passages for this low cost communication system. • Regular maintenance of rubber bag and electro-mechanical system are to be ensured.	WMCA	• Number of complaints from stakeholders.	During Operation under LGED's regular maintenance program in each 3 years.

* 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

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

Appendix-2: Environmental and Social Management Plan (ESMP) of this Sub project

ESMP for Rubber Dams: Improvement of Boro Junchari Rubber Dam in Ramu Upazila under Cox's Bazar District

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 So, there are no any mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Impacts on regional flood regime/hydrology: increased flood intensity, increased/ decreased water flow in khal/river, enhanced flood risk in adjacent areas.	• Design should be ensuring no induced flooding takes place. • Incorporation of adequate flow in design of hydraulic structures. • More recharge by increasing inundation area and period • Increase surface water irrigation facilities.	PIU	Environmental Specialists of PIU and D&SC
Pre-Construction Stage	Loss of livelihood	• Under this subproject, there is no scope of negative impact of adjacent livelihoods	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 all the communities in the areas about the project objectives and scope of works • All the safeguard documents will be disclosed to all the relevant stakeholders • All the stakeholders will be informed about the GRM	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	• Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact.	PIU	Social Development Specialist and Gender

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• In case of unavoidable circumstances, alternative access will be provided.		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	Terrestrial and wetland Habitat: Removal /cutting of trees and vegetation, Drying up or drastic reduction of permanent water bodies/areas, Significant reduction of seasonal floodplain area	• Locating sub-project to be minimized loss or avoid encroachment on sensitive areas • Design considering minimum removal / clearance of trees and vegetation • Design to avoid complete drying up of water bodies • Design to minimize reduction of seasonal floodplain area	PIU	Environmental Specialists of PIU and D&SC
Pre-Construction Stage	Fisheries: Decline in fisheries production, Reduction of fish habitat, Reduction of fish biodiversity	• Consider Construction of fish passage ways in structures and timely operation of gates to facilitate hatchling migration • Design for provision of fish shelter in khals, fish sanctuary in the Beels and fixing of fish net at the drainage structure to restrict out-migration of fish	PIU (later WMCA)	Environmental Specialists of PIU and D&SC
Pre-Construction Stage	Drainage /Water logging: congestion in low lying areas and silting of khals, excessive/ unwanted drainage	• Design to avoid drainage congestion in any lower area either inside or outside the subproject by draining upper / inside areas, inside subproject area due to inadequate drainage path • Design to ensure no excessive drainage reducing permanent water body significantly; • Design to provide adequate drainage facilities • Measures to minimize soil erosion from slopes/ embankments • Design to prevent significant seepage from irrigation canal	PIU	Environmental Specialists of PIU and D&SC

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Erosion and Siltation: Increase sediment deposit on land outside embankment, Increase siltation in tidal khal below regulators/sluices	• Design to consider existing risk and cause no significant induced impact (provide close turf on top and side slopes of embankments, set silt levels of structures at lower levels or use other techniques to flush out most of sediment load; site regulators/sluices close to outfall channels to avoid stagnant flow at tides.	PIU & Contractor	Environmental Consultant of PIU, PSC
Pre-Construction Stage	Environmentally sensitive area, Archaeological / Historical Sites	• Avoid archaeological/ historical sites, environmentally sensitive areas while considering both the subproject implementation and influence area.	PIU & Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Erosion and Siltation during the construction activity	• Adopt appropriate construction management to minimize erosion of soil from excavations, embankments/spoil deposits, etc. during rains.	PIU & Contractor	Environmental Consultant of PIU, PSC, CO
Construction Activity	Noise from construction works	• Construction activities mostly will finish at day time within 05 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kinds of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust generation	• Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), $PM_{2.5, 10}$] and Hydrocarbons must be maintained through good construction work practices. • Dust generated as a result of clearing, leveling and site grading operations shall be suppressed using water sprinklers. • Dust generation due to vehicle movement on haul roads/access roads shall be controlled through regular water sprinkling.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	• Unauthorized entry is completely prohibited in	Contractor	Environmental

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		construction site and take necessary measures for preventing this problem • Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staffs. • Records of every training must be kept at site. • All kinds of Child labour are completely prohibited in every site. • Every construction materials storage site will be well fenced by Tin and safety caution tape.		Consultant of PIU, PSC
Construction Activity	Traffic Management	• Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. • Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the Executive Engineer of Cox's Bazar. • Adequate alternative arrangements to be made to minimize impact on motorist and pedestrians. • Adequate road signs to be planted on access roads to limit vehicular speeds • Construct properly designed speed ramps on access roads	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 for any reason, adequate approvals from the appropriate department need to	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		be collected 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 works starts.		
Construction Activity	Transporting materials, machineries & equipment and personnel: Increase in road accidents	• Maintain safety measures during the movement of heavy machinery and equipment. • Proper signage to be displayed at major junctions. • Local community will be trained up 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 place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation.	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous	Preparation of a waste management plan covering the following aspects: • Waste from the temporary accommodation facilities	Contractor	Environmental Consultant of PIU, PSC

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	waste during construction.	for labor • Waste from equipment maintenance/vehicles on-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. paints, waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers. • Paints works to furnish very carefully so that water body doesn't receive any color/ paint materials. • Applicability of the Hazardous Waste Management Rules		
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 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.	• All construction equipment will be properly inspected timely. • The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. • Preparation of proper walkways and clearly designation as a walkway has to be ensured; 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. • Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. • This sub project will have Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable	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
		emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. • All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. • Provision to first aid box in sub-project areas will be ensured. • Proper Emergency evacuation response plan will exist in sub-project area. • All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. • Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. • 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		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		correct methods are being used.		
Construction activity	Reduction in Fish stocks	• Ensure minimum flow from dam during raising/filling of rubber dam • Construction of fish pass if upstream/downstream migration hampered by operation of rubber dam • Annual third-party monitoring of fish catches and biodiversity.	PIU & Contractor	PSC
Operation & Maintenance	Loss of soil fertility due to intensive/ diversified agriculture (increased use of inorganic fertilizers, pesticides), preventing nutrient rich sediment deposition on lands.	• Training to farmers on IPM / ICM through DAE/SRDI Support • Analysis of soil samples (base data) of subprojects cultivated land and fertilizer application at SRDI/DAE recommended doses • Enhance use of organic manure by farmers	WMCA/ UE	WMCA, CO, line agency DAE
Operation & Maintenance	Erosion and Siltation: erosion of loose soil from new earthwork (embankment/spoil) and deposition on agricultural land, increased siltation of river/khal bed due to construction of Rubber Dam	• Include in the O & M program- special care taking of new earthwork structures under both routine and periodic for the initial years to reduce erosion of soil during rain and deposition on nearby crop lands. • Include in the O&M program- removal of deposited silt from the channel bed upstream of weirs and elevated sill structures • Regular maintenance of re-excavated khals for removing deposited silt • Prevention of seepage from irrigation canal	WMCA/ UE	WMCA, CO
Operation & Maintenance	Noise disturbances to fauna	• Ensure operation & maintenance machinery and equipment has noise dampeners • Avoid night time activities as much as possible • Regular third-party monitoring of noise levels	PIU	Environmental Consultant of PIU, PSC
Operation & Maintenance	Odours and pollution caused by leaking toilets and faecal sludge impacting surrounding water	• Ensure preventative maintenance schedule is followed • Regular inspections of potential leaking points	PIU	Environmental Consultant of PIU, PSC

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	bodies, flora and fauna			
Operation & Maintenance	Pollution of water bodies	• Annual third-party monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Nitrates and pesticides. Test results to be compared with Bangladesh Environmental Quality Standards of DoE	WMCA	PSC
Operation & Maintenance	Decline in fisheries production, fish habitat and biodiversity	• Ensure minimum flow from dam during raising/filling of rubber dam • Utilization of all subproject wetlands for fisheries production. • Fish-friendly gate operation schedule to facilitate in-migration of fish for breeding and spawning. • Conservation of reproduction sites like beels, haors, etc. • Construction of fish shelters in re-excavated khals at regular intervals and protecting the shelters for mother fishes. • Introduction of IPM for crops and rice-fish farming in the paddy fields. • Training on improved fisheries technology, community-based culture fisheries in subproject water bodies including hatchery and restocking programme. • Annual third-party monitoring of fish catches and biodiversity.	WMCA /UE	WMCA, CO
Operation & Maintenance	Eutrophication and spreading of nuisance plant	• Incorporation of nuisance plant destruction program in the sub-project mitigation plan • Agriculture extension services for training farmers on water hyacinth-based compost preparation and motivational program for using compost fertilizer.	WMCA /UE	WMCA, CO

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Operation & Maintenance	Deterioration of water quality	• Protection of water bodies from domestic and sanitary waste disposal, and agricultural field run-off • Providing adequate natural flushing • Training to farmers on IPM / ICM through DAE/SRDI Support and inspire them to use organic manure	WMCA /UE	WMCA, CO, line agency DAE
Operation & Maintenance	Good Practice	• Proper and timely opening / closing of regulator gates, maintaining gates and hoisting gears/systems in good operable condition, etc. • Maintain rubber seal of gates property and close gates properly/timely to prevent loss of water required to be conserved • Maintaining drainage channels clear of fish bundhs, water weeds/ hyacinths	WMCA /UE	WMCA, CO
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	• The main mitigation and monitoring measures to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. • Regular third-party monitoring of air as well as receiving land and water bodies	PIU / Contractor	PSC

Waste Management Plan/Principles:

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 the following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Environmental Specialist and Social Development Specialist.

Non-hazardous solid waste generated at construction and decommissioning sites includes excess fill materials from excavation activities and crushed aggregate. Other non-hazardous solid wastes include office and kitchen wastes when these types of operations are part of construction project activities. Hazardous solid waste includes primarily the contaminated soils, which could potentially be encountered on-site due to previous land use activities, or small amounts of machinery maintenance materials, such as oily rags, used oil filters, and used oil, as well as color/paints. Management of non-hazardous materials are not so complicated and risk induced. However, the overall objective of hazardous materials management is to avoid or, when avoidance is not

feasible, minimize uncontrolled releases of hazardous materials or accidents (including explosion and fire) during their production, handling, storage and use. This objective can be achieved by implementing management controls (procedures, inspections, communications, training, and drills) to address residual risks that have not been prevented or controlled through engineering measures.

However, in order to develop an actionable waste management plan for this sub-project (contract package), the contractor needs to be in line with following principles:

- Preventing waste from throwing, leaching, or getting access to water bodies has to be maintained strictly by the contractor. Material storage site or the primary storage of waste materials shall not be closer to any water body (running or stagnant); the distance of the water body should be at least 10m from the edging part of storage.
- 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.
- Proper waste management chain should be maintained, in case of collected waste from construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.
- Description of the means should be provided by which any waste materials identified will be protected from contamination, and a description of the means to be employed in recycling the materials consistent with requirements for acceptance by designated facilities.
- Description of the means of transportation of the recyclable materials (whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site) and destination of materials.
- It is anticipated that the majority of non-hazardous and inert waste generated will be suitable for reuse, recovery or recycling and will be segregated to facilitate the reuse, recovery and/or recycling, where possible.
- Labor camp and 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. Waste, irrespective of types, shall not be stored/ piled up in the middle of the road or on such a place which may obstruct traffic movement or water runoff or might be a source of an accident or public nuisance.
- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area and subsequently sold to authorized recyclers.
- Parts of construction debris (from demolishing of labor camp and toilets in the post-construction phase) can be recycled as filling materials on the ground or be sold for use 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 the disposal site, so as to cause less environmental impact.
- Soil contaminated with engine or machinery oil shall be removed from the site and stored in a specific place, and later disposed off in a designated dumping area. Careful handling of these hazardous substances in the site shall be maintained and supervised by the contractor.

- Workers, subcontractors, and suppliers will be trained on proper waste management procedures, as appropriate for the Work occurring at Project Site.
- Organic wastes produced in the campsite 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 a labor camp or construction site shall be prohibited completely.
- Burning of any type of wastes in the construction site shall be prohibited completely.

Prepared by: Harogopal Kabiraj, Environmental Focal Person, +8801714980171
Tanvir Ahsan Haque, Environmental Specialist, +8801688117059

Reviewed by: Md. Saiful Islam, Environmental Specialist (PIU), +8801913442006

Appendix-3: Cost of Environmental Enhancement Works in BOQ

In consideration to the environmental impact's mitigation and healthy safety measures for the sub-project, the following items and cost are proposed to include 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	LS	LS@ 10,000 Tk.	10,000.00
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.	@15,000 per toilet	30,000.00
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. Payment will be made after 100% completion of the contract successfully.	1 no.	LS @5000 Tk.	5,000.00

Sl no.	Description of item	Quantity	Unit price	Total amount
4.	**Drinking Water Facilities** Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.	2 nos.	LS @ Tk. 25,000	50,000.00
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	LS @ Tk 50,000	50,000.00
6.	**Tree plantation** Tree plantation to compensate the felled down trees and enhance the ecological condition in the subproject area preferably at both sides of Road where space is available including protection, fencing and conservation, during project defects liability period as required by and as per direction of E-I-C. Tree like Dumur, Amla, Parul, Coconut, Jackfruit, Mango etc. to be planted. The payment is to be made only when trees are fully grown.	10 nos.	@ Tk. 1000	10,000.00
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. 5,000	5,000.00
8.	**Health safety warning sign:** Health safety warning sign at the site office and as per direction of the E.I.C.	LS	LS@ Tk. 5000	5,000

Sl no.	Description of item	Quantity	Unit price	Total amount
9.	**Site Cleaning and preparation** Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	LS	LS @ Tk. 10,000	10,000
10.	**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	5,000.00
11.	**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	5,000.00
12.	**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	30,000.00
13.	**Environmental management** Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax &VAT) and as per direction of the E.I.C.	1person	Monthly basis @Tk. 35,000.00 for 12 Months, i.e.,35,000Tk.*12months*. (Net payment excluding Tax &VAT).	420,000.00
	Subtotal Bill: Environmental facilities			**635,000.00**

Cost of H&S Measures under COVID 19 Situations (If required, as emergency budget)

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/AF/W2).

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.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 25 people a day and showering of 20 workers in each labor camp.
2.	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 liter can for each Site office
3.	One-time Mask (Disposable) for Contractors' Staffs	05 nos. each day in each site		N/A	12.00	5400	64, 800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
4.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
5.	Floor Cleaner (1 liter Can)	1.5 Can	N/A	2 can	250.00	3.5	875.00	
6.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
Grand Total (BDT)							**114, 125.00**	

Appendix-4: List of Participants in the Consultation Meeting

Improvement of Baro Junchari Rubber Dam
Package Number : EMCRP/AF/W2

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)
Additional Financing
জরুরী ভিত্তিতে রোহিঙ্গা সংকট মোকাবেলায় মাল্টি সেক্টর প্রকল্প
Local Government Engineering Department (LGED)
Public Consultation Participants List

Focus Group Discussion

সময়: 12:30 PM তারিখ: 28/09/2022

উপ-প্রকল্প/কম্পোনেন্ট এর নাম: Improvement of Baro Junchari Rubber Dam in Ramu Upazila

মত বিনিময় স্থান: Beside the Baro Junchari Rubber Dam Sub-Project Point

ইউনিয়ন: Kacchapia ওয়ার্ড নং: 09 ডাকঘর Gorjonia Bazar 4660 উপজেলা: Ramu জেলা: কক্সবাজার

সাব প্যাকেজ নং: EMCRP/AF/W2

অংশগ্রহণকারীদের হাজিরা (পরিচয় ও স্বাক্ষর)

ক্রম নং	নাম	বয়স	পুরুষ/নারী	গ্রাম	স্বাক্ষর / টিপসই
০১	[illegible]	৩২	পুরুষ	[illegible]	[illegible]
০২	[illegible]	৫০	〃	[illegible]	[illegible]
০৩	মো: [illegible]	২৯	〃	[illegible]	মো: [illegible]
০৪	[illegible]	২৮	〃	[illegible]	[illegible]
০৫	মো: [illegible]	৩২	〃	[illegible]	[illegible]
০৬	[illegible]	৫২	〃	[illegible]	[illegible]
০৭	[illegible]	৩০	〃	[illegible]	[illegible]
০৮	মো: [illegible]	২৫	〃	[illegible]	[illegible]
০৯	মো: [illegible]	৩৫	〃	[illegible]	[illegible]
১০	মো: [illegible]	৭০	〃	[illegible]	[illegible]
১১	[illegible]	৫২	〃	[illegible]	[illegible]
১২	[illegible]	৬০	〃	[illegible]	[illegible]
১৩	[illegible]	৫৫	〃	[illegible]	[illegible]
১৪	[illegible]	৫৭	〃	[illegible]	[illegible]
১৫	[illegible]	৫৪	〃	[illegible]	[illegible]
১৬	[illegible]	৫২	〃	[illegible]	[illegible]

Improvement of Baro Junchari Rubber Dam
Package Number : EMCRP/AF/W2

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)
Additional Financing
জরুরী ভিত্তিতে রোহিঙ্গা সংকট মোকাবেলায় মাল্টি সেক্টর প্রকল্প
Local Government Engineering Department (LGED)
Public Consultation Participants List

Focus Group Discussion

সময়: 12:30 PM তারিখ: 28/09/2022

উপ-প্রকল্প/কমপোনেন্ট এর নাম: Improvement of Baro Junchari Rubber Dam in Ramu upazila

মত বিনিময় স্থান: Beside the Baro Junchari Rubber Dam Sub-project Point

ইউনিয়ন: kacchapia ওয়ার্ড নং: 09 ডাকঘর: Gorjonia Bazar 4660 উপজেলা: Ramu জেলা: কক্সবাজার

সাব প্যাকেজ নং: EMCRP/AF/W2

অংশগ্রহণকারীদের হাজিরা (পরিচয় ও স্বাক্ষর)

ক্রম নং	নাম	বয়স	পুরুষ/নারী	গ্রাম	স্বাক্ষর / টিপসই
১	[illegible]	৩৫	পুরুষ	[illegible]	[illegible]
২	মো: ইউনুছ	৩০	পুরুষ	মিয়াজিপাড়া	ইউনুছ
৩	[illegible]	৫৫	"	[illegible]	[illegible]
৪	[illegible]	২৭	"	[illegible]	[illegible]
৫	মো: [illegible]	২৫	"	[illegible]	[illegible]
৬	[illegible]	২৮	নারী	মিয়াজিপাড়া	[illegible]
৭	[illegible]	৩২	"	[illegible]	[illegible]
৮	[illegible]	৩০	"	মিয়াজিপাড়া	[illegible]
৯	[illegible]	৫৫	"	[illegible]	[illegible]
১০	[illegible]	৩২	"	[illegible]	[illegible]
১১	[illegible]	৩০	"	[illegible]	[illegible]
১২	[illegible]	২২	পুরুষ	[illegible]	[illegible]

Public Consultation Participants' List

Appendix-5: DO letter from the local Member of Parliament

বাংলাদেশ জাতীয় সংসদ
Bangladesh Parliament

Shaimum Sarwar Kamal
Member of Parliament
296 Cox's Bazar- 3
Bangladesh Parliament
Cell: 0172-0000048

স্মারক নং: ২৯৬.০০০.১১.২০২২.

তারিখ: ১৭/০৮/২০২২ইং

বিষয়: রামু উপজেলাধীন বড় জাংছড়ি রাবার ড্যাম (এসপিনং - ২৩০৯৬) এর রাবার ব্যাগ পরিবর্তন প্রসংগে-

জনাব

সালাম জানবেন। আমার নির্বাচনী এলাকা ২৯৬, কক্সবাজার -৩ (সদর-রামু-ঈদগাঁও) আসনের রামু উপজেলার কচ্ছপিয়া ইউনিয়নের বড় জংছড়ি রাবার ড্যাম (এসপিনং - ২৩০৯৬) টি বিগত ২০০৭সালে এলজিইডি কর্তৃক নির্মাণ করা হয়। কিন্তু রাবার ড্যাম এর রাবার ব্যাগটি ইতিপূর্বে দুইবার ছিড়ে গেলে এলজিইডি কর্তৃক মেরামত করা হয়েছিল। বিগত শুষ্ক মৌসুমে রাবার ব্যাগ ফুলানো হলে পুনরায় রাবার ব্যাগটি প্রায় অংশ ছিড়ে যাওয়ায় চাষাবাদ করা সম্ভব হয়নি। আগামী শুষ্ক মৌসুমের পূর্বে রাবার ব্যাগ পুনস্থাপন করা না গেলে প্রায় ১০০০ হেক্টর কৃষি জমি অনাবাদি থেকে যাবে। ফলে উপকার ভোগীগণ চাষাবাদ করতে না পেরে দুর্ভোগে পড়বে। তাই জরুরী ভিত্তিতে বড় জাংছড়ি রাবার ড্যাম এর রাবার ব্যাগ সহ অন্যান্য মেরামত কাজগুলো করার প্রয়োজনীয় ব্যবস্থা গ্রহণের জন্য অনুরোধ করা হল।

ক্রঃ নং	এসপি নং	ইউনিয়ন	সাব প্রজেক্টের নাম	মন্তব্য
১	২৩০৯৬	কচ্ছপিয়া	রামু উপজেলাধীন বড় জাংছড়ি রাবার ড্যাম সাব প্রজেক্ট	

বরাবর

প্রধান প্রকৌশলী
স্থানীয় সরকার প্রকৌশল অধিদপ্তর
এলজিইডি ভবন, আগারগাঁও
শেরেবাংলা নগর, ঢাকা-১২০৭।

১৭/০৮/২০২২

(আলহাজ্ব সাইমুম সরওয়ার কমল)
সংসদ সদস্য
২৯৬, কক্সবাজার-৩
বাংলাদেশ জাতীয় সংসদ

Appendix-6: Formation of GRC committee

উপজেলা প্রকৌশলীর কার্যালয়

স্থানীয় সরকার প্রকৌশল অধিদপ্তর
রামু, কক্সবাজার।

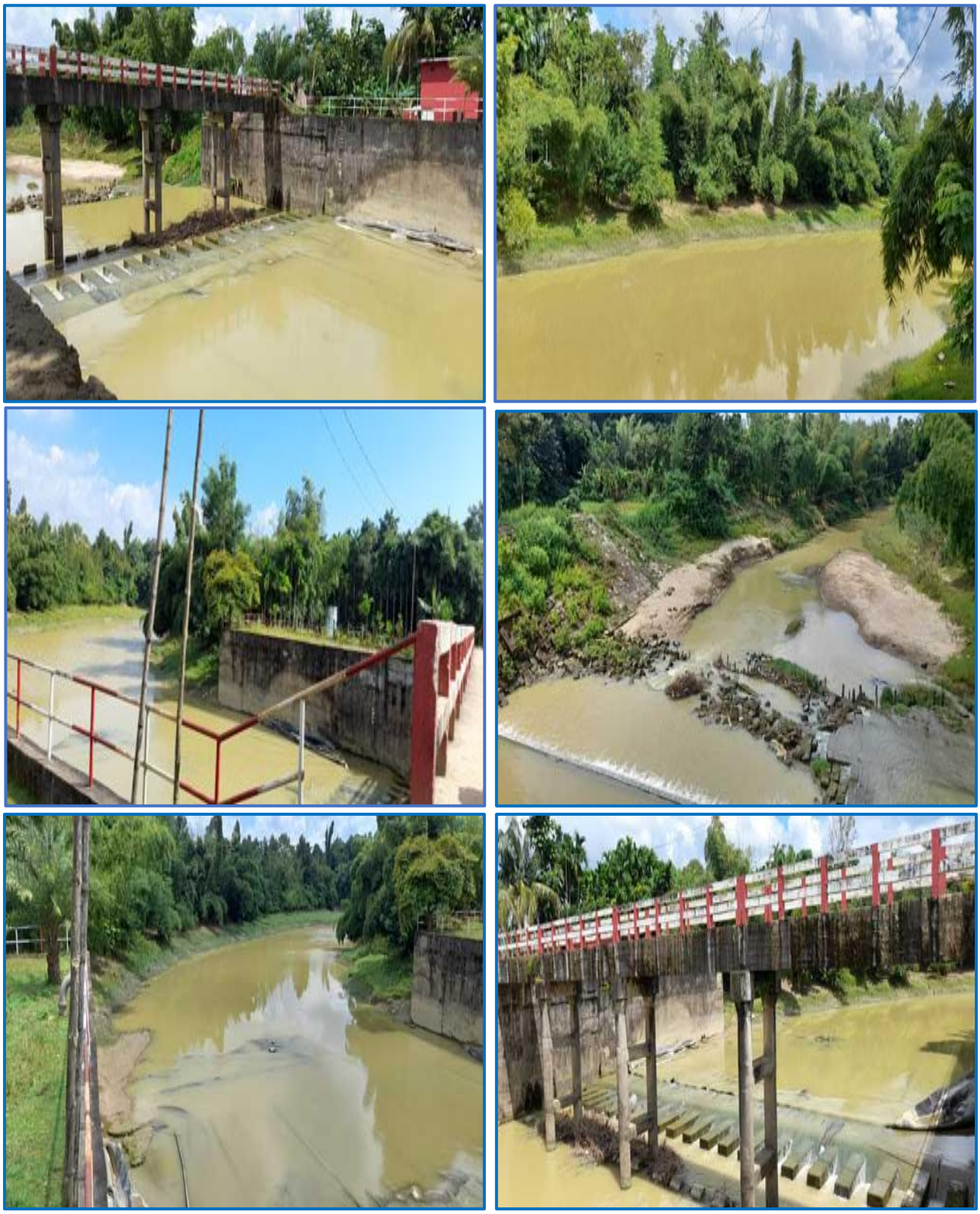
কাজের নামঃ বড় জাংছড়ি রাবার ড্যাম উন্নয়ন।

উক্ত কাজের জি আর সি কমিটির সদস্যবৃন্দের নাম নিম্নে পদর্শিত হলো।

ক্র. নং	নাম ও পদবী	জি আর সি কমিটির পদবী	মন্তব্য
১	জনাব মঞ্জুর হাছান ভূইয়া, উপজেলা প্রকৌশলী, এলজিইডি, রামু, জেলা: কক্সবাজার	সভাপতি	
২	জনাব মোঃ মাসুদুজ্জামান হায়দার, সোস্যাল ফোকাল পার্সন	সদস্য সচিব	
৩	জনাব হরগোপাল কবিরাজ, পরিবেশ ফোকাল পার্সন	সদস্য	
৪	জনাব আবু মোঃ ইসমাঈল (নোমান), চেয়ারম্যান; ইউনিয়ন: কচ্ছপিয়া; উপজেলা: রামু; জেলা: কক্সবাজার	সদস্য	
৫	জনাব মোঃ ইউনুছ, সমাজকর্মী, সচেতন স্থানীয় প্রতিনিধি ; রামু; জেলাঃ কক্সবাজার	সদস্য	
৬	জনাবা মালেকা বেগম, নারী ইউপি সদস্যা, ইউনিয়নঃ কচ্চপিয়া, উপজেলা: রামু; জেলা: কক্সবাজার	সদস্য	
৭	জনাব জহির উদ্দিন, সভাপতি, বড় জাংছড়ি পাবসস, উপজেলা: রামু; জেলা: কক্সবাজার	সদস্য	

মঞ্জুর হাছান ভূইয়া
উপজেলা প্রকৌশলী (এলজিইডি)
রামু, কক্সবাজার।

Appendix-7: Pictorial View of the Sub-Project sites



Overview of surrounding features of the Sub-project