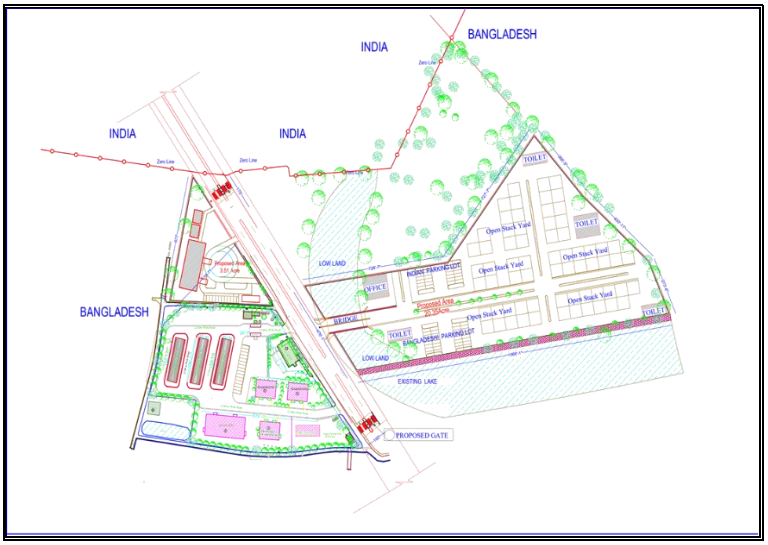
BANGLADESH LAND PORT AUTHORITY

Accelerating Transport and Trade Connectivity in Eastern South Asia (ACCESS)-

Bangladesh Phase 1 Project



Environmental and Social Impact Assessment (ESIA)

for

The Development of Burimari Land Port

DRAFT REPORT

March 2022

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Abbreviations and Acronyms

AOI	Area of Influence
BLPA	Bangladesh Land Port Authority
CSC	Construction Supervision Consultant
C-ESMP	Contractor's Environmental and Social Management Plan
DoE	Department of Environment
E&S	Environmental and Social
EA	Environmental Assessment
ECA	Environmental Conservation Act; Ecologically Critical Areas
ECC	Environmental Clearance Certificate
EcoP	Environmental Code of Practice
ECR	Environment Conservation Rules
EHS	Environmental Health and Safety
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
EMP	Environmental Management Plan
ESS	Environmental and Social Standard
ESCP	Environmental and Social Commitment Plan
ESMoP	Environmental and Social Monitoring Plan
ESIA	Environmental and Social Impact Assessment
FGD	Focus Group Discussions
GoB	Government of Bangladesh
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
IDA	International Development Association
IEE	Initial Environmental Examination
IUCN	International Union for Conservation of Nature
LC	Land Customs
MOEFCC	Ministry of Environment, Forest and Climate Change
MoS	Ministry of Shipping
MT	Metric ton or tones
NBR	National Board of Revenue
NGO	Nongovernmental Organization
NOC	No Objection Certificate
OHS	Occupational Health and Safety
O&M	Operation and Maintenance
OP	Operational Policy
PD	Project Director
PID	Project Information Documents
PIU	Project Implementation Unit
PM	Particulate Matter
RPF	Resettlement Policy Framework
SIA	Social Impact Assessment
ToR	Terms of Reference
USD	US Dollars
VOC	Volatile Organic Compounds
WB	World Bank
WBG	World Bank Group
WHO	World Health Organization

Executive Summary

Introduction

1. The proposed World Bank-financed Accelerating Transport and Trade Connectivity in Eastern South Asia (ACCESS) project will seek to address the main drivers of the high cost of trade and transport in the sub-region, namely low levels of technology adoption in trade facilitation, inadequate transport, and logistics infrastructure, and regulatory and procedural impediments to the cross-border movement of freight. The Program Development Objective is *to develop efficient and resilient regional trade and transport in the Eastern South Asian countries*. This ESIA outlines the potential environmental and social impacts and mitigation actions for Phase 1 of the Burimari Land Port development work under Components 1, 2, 3 and 4 of the Program, i.e., *Land Port Development and Border Management Improvement*. They are: (1a) Automated border management system, (2a) Resilient land port infrastructure at Benapole, Bhomra and Burimari Land Ports, (3f) Technical assistance to foster contemporary border management, and (4) Contingency Emergency Response.

2. Burimari-Changrabandha is the third largest land border crossing between Bangladesh and India. The land port is situated in the Rangpur Division in northern Bangladesh. The land port caters to 140,000 trucks per year and cannot meet increasing freight flows, leading to congestion and delays in border crossing time. This border is the designated land port for trade to and from Bhutan. The feasibility study and detailed design report for Burimari land port are more advanced than Benapole and Bhomra. The expected infrastructure interventions will include, inter alia, construction of open stackyard, international passenger terminal building, export terminal, warehouse, parking yard, truck terminals, administrative, residential, and dormitory buildings, re-excavation of a dead canal adjacent to the proposed land, bank protection of river and lake, construction of two culverts to connect the existing and proposed land port.

3. The project is expected to include inter alia construction of new open stackyard, international passenger terminal building, export terminal, warehouse, parking yard, truck terminals, administrative, residential, and dormitory buildings, re-excavation of a dead canal adjacent to the proposed land, bank protection of river and lake, construction of two culverts to connect the existing and proposed land port. The project will increase the port's capacity from 4 acres to 25.5 acres and, in turn, contribute to the national economy. Furthermore, the development effort will boost production and enhance export earnings.

Policy, Legal & Administrative Framework

4. The key legislations relevant for environmental assessment for ACCESS program Phase 1 components are the ECA 1995 and the ECR 1997, along with the Labour Act 2006 and Rules 2015, with subsequent amendments and other relevant environmental and social-related policies and laws. To set an illustrative directive for abiding by the act, Bangladesh Government, through the ECR 1997 and its subsequent amendments, as specified in rule 7(2), lists the different types of industrial projects into four categories, namely, Green, Orange A, Orange B, or Red, based on the severity of its potential environmental impacts. This ESIA report is prepared following the national laws and environmental and social standards of WB. Some standards are not relevant to this sub-project. The gap analysis is presented below-

Table E-1: Gaps Between GoB Laws and World Bank ESSs

WB ESF Standard	Gaps	Gap Minimization
ESS1: Assessment and Management of Environmental and Social Impacts and Risks	(i) EIA study screening and scoping does not guarantee all ESS standards in the assessment. (ii) EIA study does not advocate the inclusion of both the environment and social impacts at the same scale, but the ESF does. (iii) The stakeholder engagement during the conduct of the EIA is limited, and the EIA report is not disclosed.	ESIA has suggested following the ESS1 requirements in the relevant sections of Environmental Management Procedures. This ESIA's scoping is conducted to address WB ESSs in addition to GoB requirements. The basic principle of ESF, which is the mitigation hierarchy (avoid, minimize, mitigate, offset), is considered in this ESIA and the project design.

WB ESF Standard	Gaps	Gap Minimization
	(iv) The EIA system in Bangladesh does not require analysis of alternatives. (v) There are no associated facilities for the project.	
ESS2: Labor and Working Conditions	(i) The Labor Act does not explicitly require that development be assessed and reviewed regarding labor and working conditions, including OHS requirements, before approval. (ii) The Labor Act does not require development projects to prepare Labor-Management Plans/Procedure or OHS Plan.	An OHS plan including traffic safety for the workers should be developed during the project implementation. A guideline for developing Site-Specific Management plans including OHS has been included in this ESIA.
ESS3: Resource Efficiency and Pollution Prevention and Management	Existing energy and water conservation policies, laws, and regulations require development projects to assess resource efficiency issues and incorporate them into their ES risk management plans.	ESS3 covers all pollution aspects, including water, air, dust, noise, etc., which are the major environmental aspects. The WBG EHS guideline contains the performance levels and measures generally acceptable to the World Bank Group and generally considered achievable in new facilities at reasonable costs by existing technology. WBG EHS Guidelines are followed in the preparation of this ESIA.
ESS4: Community Health and Safety	Covered under ESIA, but the systems do not provide precise requirements for the development project and implementation. Health issues are within the purview of MHFW, but it is currently not involved in project preparation and oversight.	Guideline for Community Health Safety addressed in ESMP, LMP, GAP, and SEA/SH Plan.
ESS5: Land Acquisition, Land Use Restriction, and Involuntary Resettlement	Bangladesh: ARIPA (i) does not require RAP preparation in the case of non-titled entities. (ii) does not provide compensation or assistance to those who do not have a formal legal claim to the land; (iii) does not provide transitional allowances for restoration of livelihoods for informal settlers; (iv) relies on cash compensation, no developmental objectives; (v) no provision to give special attention to the vulnerable groups (vi) valuation of lost asset is not based on 'replacement cost' standard	An RPF is prepared, followed by the project to prepare site-specific RAPs. Both RPF and RAPs will consider ESS5 requirements.
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	No equivalent requirements on (i) the application of the hierarchy of measures; (ii) the preparation of Biodiversity Management Plan; (iii) differentiated measures on types of habitats; (iii) conducting due diligence on primary suppliers.	These issues have been addressed in the ESIA. A detailed guideline has been given in the ESIA preparation section. [Sections 4.4, 7.4.6 and 8.1.7 covers all the aspects related to ESS6]
ESS7: Indigenous People	No equivalent requirements on (i) coverage of IP impacts in the ESIA; (ii) special treatment or differentiated approach to IPs and vulnerable groups;	No SEC has been identified during the ESIA preparation stage, and ESS7 is irrelevant to this sub-project.

WB ESF Standard	Gaps	Gap Minimization
	(iii) conduct of FPIC; (iv) development of IP Plan.	
ESS8: Cultural Heritage	No equivalent requirements on (i) the application of the hierarchy of measures; (ii) the development of Cultural Heritage Management Plan; (iii) the development and adoption of project-specific Chance Find Procedures; and (iv) the engagement of cultural heritage experts.	A detailed guideline has been included in ESMF and the ESMP section.
ESS9: Financial Intermediaries	Not applicable to the country system. Project proponents, regardless of funders, are subject to the same country's laws.	Not relevant to this sub-project.
ESS10: Stakeholder Engagement and Information Disclosure	The ECA/ECR does not explicitly require consultation, but the ESIA guidelines issued by DoE and other agencies recommend public consultations during scoping and the preparation of the ESIA. There is also no provision for any stakeholder engagements during project implementation	A guideline for stakeholder engagement has been provided in this ESIA, and a standalone SEP has been prepared and implement in sub-project designing and construction phase.

Project Description

5. With the BLPA, the land port of Burimari is located at Patgram under Burimari Union. It is Bangladesh's third-largest land port. This Environmental Impact Assessment (ESIA) document summarizes the environmental and social impacts of the land port construction/reconstruction/expansion and accompanying activities. Expansion of the existing port area will require additional land, of which major portions are barren khas (government owned) land. However, a small portion- 3.51 acres of private land will also need to be acquired. Some economic displacement may also occur as some traders, and informal land users are also present in the project area. The impacts on these traders and informal land users will be assessed and mitigation measures will be put in place to minimize or avoid any adverse impacts on them. Being on the transit route in Southeast Asia, Bangladesh has significant prospects of expanding trade with its neighbors, hence the government of Bangladesh has launched this new project to develop the infrastructure of three land ports, including Burimari, to increase trade with India.

Specification for Building			
Item	**No.**	**Type**	**Area**
Office	1	Floor: 4-storied	Sqm: 2000 per floor
Residential	2	Floor: 4-storied	Sqm: 300 per floor
Land Filling			
Item	**Amount/Remarks**		
Earthwork's volume	**3 lac cum if filling height is 3meter**		
Source of filling material	**From the surrounding river bed. To be finalized by the Design Team.**		
Boundary wall			
Item	**Amount/Remarks**		
Length of the boundary wall	**1200 meter**		
Height of the boundary wall	**Minimum 15 ft from FGL**		
Width of the boundary wall	**Thickness 15 and 10 inch**		
Water Supply System			
Item	**No./ Amount/Remarks**		
Number of Pump House	**1 no**		

The yield of the Wells	**300 meters**
Estimated daily production	**1000 liters daily**
The capacity of the water reservoir	**100000 liters**
Length of the pipeline route	**2000 meter**
Item	**No./ Amount/ Remarks**
Number of watchtowers	**6 no's**
Height of the watchtower	**12 meters**
Electrical design	**Street light, tower, electric tower, over the boundary wall in the operational area, underground cable laying**
Requirement of electricity	**100 KVA**
Capacity of warehouses	**15000 sqm**
Open Stockyard capacity	**81000 sqm**
Area of Transshipment Sheds	**5000 sqm**
RCC Works	**3,15,000 cum**
The thickness of the pavement	**300 mm**
Amounts of steel required	**36000 mton**
Length of the internal road network	**1500 meter**
Width of Internal Road Network	**21 meter**
Length of the drainage network	**2500 meter**
Type of internal drains	**RCC**

Natural and Socio-Economic Features of the Project

6. The sub-project area is situated in the Northern Part of the Region. This is a region characterized by extreme climatic events like drought and water scarcity. The mean maximum temperature in the summer is well above 32°C, while the mean lowest temperature in the winter is below 10°C. Summers are hot and dry, with a sweltering westerly breeze, while the rainy season is quite wet, with 2,000 to 3,000 mm of rainfall. The sub-project AOI is in the Old Himalayan Piedmont Plain physiographic unit.

7. This area is characterized by gently sloping ground at the foothills and colluvial and alluvial deposits by rivers and streams from the slopes. The hydrology of the Dharala River was obtained from the Bangladesh Water Development Board's Hydrology Department (BWDB). The daily data were evaluated, and the year's minimum, average, and highest values were tabulated. The data shows, in 2011, the water level values were lower than in previous years. Despite this, the values did not change significantly over time. The lowest and highest water levels were 56.69 m (2008) and 60.89 m (2017).

8. Rangpur division comprises 80 percent alluvial soil from the Tista basin and 20 percent barren terrain. The average elevation is less than 50 meters above sea level. Burimari is situated in the Lalmonirhat district of the Rangpur division has a relatively flat topography, with higher levels in the northern and western parts and lower levels in the eastern and southern parts. The sub-project areas are mostly plain agricultural terrain that is nearly flat. Lalmonirhat is situated between 50 and 300 meters above sea level. The elevation in the Central position varies between 30 m a.m.s.l. and 75 m a.m.s.l. Burimari is 62 meters above sea level.

9. The baseline environmental quality was determined by conducting field investigations inside the effect zone in December 2021 and analyzing data for several environmental components such as air and noise, water, and soil. $PM_{2.5}$ and PM_{10}, SO_2, NO_2, Carbon Monoxide (CO), O_3, and Volatile Organic Carbon (VOC) are the principal air pollutants in the sub-project area. The test results showed that the noise level data had exceeded the DoE standard for all the sampling locations, and the continuous traffic loading-unloading work at the port area was the primary source of noise pollution. The proposed regions are barren land with few houses, standing crops, few trees, and primarily bushes and grasses.

10. There are no archaeological sites around the identified proposed sites or along the alignments, nor any sensitive cultural or biodiversity receptors of international, national, state, or district importance, such as protected areas, key biodiversity areas, forest areas, sacred graves, or historical/cultural monuments. Figure 4.19 of the ESIA report illustrates no protected area within the 10 km buffer zone.

11. In the sub-project location, a total of 50 household samples, of which 16 within the sub-project area, have been surveyed to identify the demographic condition. The 50 sample households have 237 individuals, consisting of 130 males and 107 females. Of the 50 sample households, 21.5% are male above age 45, 21.4% are female above age 45. The primary profession is shop/hotel owners having the highest percentage of 20%. Followed by agriculturists (18.95%) and laborers (16.84%). The lowest percentage (1.05%) is farmers, teachers, and home businesses.

Stakeholder Engagement and Public Consultations

12. A total of five (05) focus group discussions (FGDs) were held between 10th to 13th December 2021 in Burimari Land Port, Burimari, Patgram, Lalmonirhat. During the discussion and consultations, most participants showed a positive response towards implementing the sub-project and asked to implement the sub-project as soon as possible. However, the landowners suggested providing better relocation and job opportunities to minimize or avoid any losses due to land acquisition.

13. There has been a mixed reaction among the people to the minimum land acquisition in the Burimari land port area. Port professionals, such as Clearing and Forwarding (C&F) Agents, import-export traders, stone-crushing traders, said they would be positive if the land acquisition were required to develop and modernize the port. On the other hand, the community living on the port's north side and various shopkeepers, schoolteachers, and others said people would be harmed if the land was acquired.

14. As identified during the consultations, the labor provided for the construction of any large-scale infrastructure in Burimari is provided by the construction Contractor/s. They usually call in construction laborers from their sources from different parts of the country. Thus, the locals do not get much opportunity to work on any project other than as port laborers. In addition to the construction workers in the area adjacent to the port, many people come from other upazillas adjacent to Burimari to work in the port. Typically, the law-and-order situation in the area seemed to be good during any project-construction work.

15. Workers participating in the FGD indicated that the port authorities had not taken any initiative regarding the working environment of the port workers, avoidance of accidents at work, or providing helmets, gloves, etc., for safety. Workers are working every day with extreme health risks without any safety equipment. There is no first aid provision for the workers inside the port area.

16. Those whose land will be acquired will have to pay the price of having to move away from the long-known society or community due to relocation, though they agreed that the development and modernization of the port would be beneficial for them in the long run.

17. Women were not seen participating in Clearing and Forwarding (C&F) agents, export-import businesses, grocery stores, cosmetic shops, or any other type of business in the port area. There is a food hotel, where all the male and female family members run the business together. In addition, some women work as cooks or cleaners in local food hotels. Some work for wages on other people's agricultural land. The small number of women who work as wage laborers in Burimari mainly work on other people's agricultural lands. Some also work as cooks at food hotels in the port vicinity or help with housework at other people's homes. No evidence of sex trade or sex/ human trafficking was shared during consultations by any participants/ interviewees during the ESIA process.

Environmental and Social Risks and Impacts

18. The proposed sub-project activities are assessed to have “Substantial” environmental & social risks, given that most of the construction works will happen in the confined area, specific to the site.

19. There will be no significant impact on the region's physiography due to this project. Compaction of soil caused by traffic, stockpiles, and temporary facilities is also likely to impact soil structure, affecting organism activity, water retention capacity, and nutrient retention.

20. There is a river beside the project AOI named ‘Dharala.’ This river is non-tidal and contains many stone boulders. The proposed alignment is just 100 m away from the river. Construction activities may have localized and temporary impacts on surface and groundwater. However, these can be mitigated by standard measures.

21. Construction materials such as stone, boulder, limestone, and construction activities can increase dust emissions. The high volume of traffic is also responsible for causing high dust emissions. The principal

noise source is from equipment, machinery, and vehicles during construction activities. Earthmoving types of machinery, e.g., excavators, graders, and vibratory rollers, may generate noise levels of more than 70 dB (A). Since the land port area will be expanded in a planned manner, therefore risks will be reduced in operational phase. The operational phase will have a higher traffic volume, which may cause some dust pollution, though not as much as the construction stage

22. The project interventions will generate solid non-hazardous, and hazardous wastes during the construction phase. Furthermore, there appear to be no environmentally sensitive areas affected by the sub-project activities. BLPA has also demonstrated under the existing WB BRCP-1 that it can manage environmental and social risks and impacts adequately. Environmental and social risk assessment has been conducted based on the ESS 1-10. As per the assessment, most risks are categorized as substantial.

23. The socio-economic impacts have mostly positive and a few negative aspects. The sub-project will require land acquisition. Land acquisition will lead to loss of land for both title and non-titleholders and cause disruption in income and livelihood streams for individuals and groups of people. Much of proposed site is government-owned land (Khas- land) and only about 3.51 acres of private land needs to be acquired for construction works; few structures will have to be relocated.

24. The labor influx issues may have a negative impact on the sub-project area in terms of additional burden on public infrastructures such as health services, utilities such as water and electricity, housing, and social dynamics. When any construction work is started on a large scale, all the decisions regarding the supply, distribution of workers' labor, their wages, etc., are taken by the concerned contractors.

25. Potential risks associated with workers/laborers engaged in road construction works are safety issues while at work like injuries/accidents/ fatalities. Short-term effects due to exposure to dust and noise levels while at work; long-term effects on life due to exposure to chemical /hazardous wastes.

26. The COVID-19 pandemic has made workers particularly vulnerable to elevated health risks. However, these can be mitigated by employing standard control measures. No unique initiative related to the COVID-19 pandemic was seen in the Burimari land port area. Warning notices were put up at various entrances to the port, such as customs, immigration, passenger terminals, etc., saying, "Services will not be provided without wearing a mask." Except this, no other initiatives seem not to have been taken by the local government or any other authorities in and around the port area such as signage for maintaining physical/social distancing and/or facilities to disinfect hands. Previous infrastructure development projects at Burimari area have shown that the work nature is mostly labor intensive. Since the living facilities within the small area are limited the additional workforce may not have adequate resources to meet the requirement of good working conditions during construction.

27. The sub-project will positively impact the economic development of the people. Much development, including transport communication in the region, will be improved; thus, the socioeconomic condition will be developed. Impact on livelihood will be permanent and beneficial. New job opportunities will be created due to the project, and the livelihoods of local people should be improved.

Mitigation Measures

- **Vulnerable group:** People may become economically vulnerable if construction work causes disruption to local businessman and traders as well as the small level entrepreneur. There is minimal land acquisition which is 3.51 acres needed for this sub project. The land acquisition may also cause some individuals to become landless. Through the provisions and measures in the Resettlement Action Plan (RAP), impacts on such vulnerable people will be mitigated. The vulnerable groups will be benefitted economically. The impact on them during operation is likely to be minimal.
- **Labour Risk:** The sub-project has prepared a Labor Management Procedure (LMP), the Environmental, Occupational Health & Safety (EOHS) Guideline, that include a labor specific GRM. The Contractor will adopt the LMPs, develop worker CoCs, adhere to OHS protocol, and address SEA/SH incidents. The Contractor will develop a Workers' Camp Management Plan to address working conditions for laborers and potential impacts and mitigation measures of labor influx.

- **Health and Safety of Community:** To mitigate potential impacts to the health and safety of villagers, the Contractor will be required to develop a community health and safety risk assessment and prepare a plan. Specific attention will be given to COVID-19 risks and mitigations.
- **Soil Pollution:** The Contractor will ensure top soil is carefully removed and stored separately so that these can be used productively at the site or in other locations. The Contractor shall prepare a work plan detailing the type and numbers of equipment required and the estimated volume of material to be cut or excavated. The contractor shall also ensure all waste materials (liquid and solid) are disposed of in designated sites with appropriate controls to prevent soil pollution. Oil, grease, and chemical-handling facilities should be located considering natural drainage systems, and port should include secondary containment for above-ground liquid storage tanks and tanker truck loading and unloading areas BLPA for the operational stage.
- **Surface-water Pollution:** The Contractor shall comply with Bangladesh's national and other regulations and ensure that all existing watercourses and drains within site are kept safe and free from any debris and any excavated materials arising from the works. The earthwork sites where the exposed land surface is vulnerable to runoff shall be consolidated and covered. Spillage and toxic substances may pollute the watercourses during the operational phase. All facilities and structures shall be regularly inspected and maintained to ensure proper and efficient operation at all times, particularly following rainstorms. Any spills shall be adequately cleaned, and wastewaters from the site shall be treated to acceptable standards before releasing to the environment. The fuel storage and equipment maintenance yard should have weather/rain protection and should be on concrete pads to prevent dripping and leaking oils from entering the water bodies via surface runoff during the operational period.
- **Groundwater Abstraction and Pollution:** Pumping of groundwater should be from deep aquifers of more than 300 m to supply arsenic-free water. Tube wells will be installed regarding the surface environment, groundwater protection from surface contaminants, and aquifer cross-contamination. No wastewater hall be discharged to the aquifer. The BLPA will prepare a spill prevention, control, and countermeasure plan. Rainwater harvesting and groundwater recharge will be good approaches to reduce the risk of over extraction of groundwater. Groundwater scarcity will be reduced if this provision is included in sub-project design.
- **Air/Dust Pollution:** To prevent and control the dust levels in $PM_{2.5}$ and $PM_{10,}$ construction material stockpiles shall be sprinkled with water. Water should be sprayed on temporary service and access roads. The Contractor will ensure trucks are loaded only up to permitted capacities to prevent high emissions and ensure trucks used for transporting material are covered by tarpaulin and provided tailboard. In the operational phase, sweeping yards and handling areas regularly Keeping transfer equipment in good functioning order (e.g., cranes, forklifts, and trucks) should be ensured. At the moment, combustion of fossil fuels is mostly responsible for the carbon emissions. If modern concrete blocks are used instead of traditional bricks, the rate of brick burning is reduced, resulting in a lower carbon footprint. In sub-project design this provision shall be considered.
- **Noise Pollution:** All machinery, equipment, and vehicles shall have a definite maintenance schedule maintained by the Contractor to minimize the noise levels. Environmental measures such as noise barriers, etc., shall be constructed for the identified sensitive receptors well before commencement as part of Contractor's site-specific ESMP (C-ESMP). In the operational stage, consideration should also be given for developing vegetation, tree plantation, and tall boundary walls around the port facilities to reduce noise and dust levels.
- **Land Acquisition & Involuntary Resettlement:** A Resettlement Policy Framework (RPF) is prepared, following that a Resettlement Action Plan (RAP) will be developed that will contain details of the required mitigation provisions.
- **Loss of biodiversity and natural resources:** For plantations, only local species that use less water and have been approved by the forest department will be used. The ESMP Budget includes a cost provision for Compensatory Plantation.

- **Restoration of Cultural Heritage:** There is no sensitive location or cultural heritage in the sub-project location. So, restoration is not required. The ESMP will include chance find procedures, and chance find clauses will be included in work contracts with Contractors.
- **Traffic Congestion:** Implement road safety measures (such as safety signboards, flagmen, speed breakers, zebra crossings, etc.). Temporary crosswalks or bridgeways will be provided to ensure the safety of the workers and the public.
- **Universal Access:** Under this project and in accordance with the ESF, Project shall define vulnerable person includes Children, people with disabilities and persons above the age of 65 years irrespective of their physical status. Needs and concerns of the local people including the disadvantaged group like people with disabilities will be considered with provisions of universal access (ramp) with railing and other facilities. These concerns and needs of vulnerable groups will be addressed through a mix of measures that includes additional assistances

28. Waste management and minimizing potential impacts during construction will depend on implementing appropriate procedures, protocols, and monitoring of materials being delivered, handled, and stored before disposal.

29. BLPA has planned to include a consulting package to recruit an NGO to develop and execute a human trafficking public awareness campaign at land ports.

30. The ACCESS program will establish a Grievance Redress Mechanism (GRM) to address environmental, social, and construction-related issues and complaints from the project affected parties and other stakeholders. Two-tier Grievance Redress Committees (GRC) will be established for this Project.

31. BLPA will, with set up and run a separate GRM for sexual exploitation and abuse, and workplace sexual harassment (SEA/SH). Grievances related to SEA/SH will be reported through the SEA/SH focal point and will adhere to the strict confidentially and in all cases, follow the survivor centric approach dealing with the victim and related grievance cases. BLPA will, with set up and run a separate GRM for sexual exploitation and abuse, and workplace sexual harassment (SEA/SH). Grievances related to SEA/SH will be reported through the SEA/SH focal point and will adhere to the strict confidentially and in all cases, follow the survivor centric approach dealing with the victim and related grievance cases. BLPA will also seek helps from civil society organizations (NGOs) with relevant expertise in managing any potential SEA/SH related cases.

32. The Project's results framework includes specific CE related indicators to measure the satisfaction of the beneficiaries/users and as well as share of grievances received that are processed within the stipulated service standards. Information about the GRM will also be posted online on the respective IA's website BLPA: http://www.bsbk.gov.bd/

33. As most of the lands for the sub-project are government owned khas land, only 3.51 acre of the lands need acquisition. The owners of the lands will get compensation at replacement cost as per GoB and WB ESS5 provisions. Each affected family shall be given a one-time "Resettlement Allowance"; Rehabilitation grant for reconstruction of affected assets, and Training for skill development. A Resettlement Action Plan (RAP) will be developed to contain details of such mitigation provisions.

34. The estimated cost for the ESMP will require review at the time of detailed design and estimation stage. Total cost for environmental mitigation, monitoring and training will be BDT 25,340,000.00 (approx. USD 300,000) in the construction phase. In the operation phase, annual estimated cost is BDT 4,950,000/yr (approx. USD 60,000/yr).

Institutional Arrangements

35. The Project Implementation Unit (PIU), established under BLPA, will oversee project implementation. The procurement of consultants for the engineering designs E&S monitoring for the planned sub-components will be the responsibility of the PIU. The Project Director will oversee the PIU (PD). The ACCESS Program will be overseen by inter-ministerial "Project Coordination Committee" (PCC) between the 3 IAs (RHD, NBR, BLPA). The PCC will be responsible for strategic discussions and decisions, inter-agency coordination, and overall project monitoring and oversight. The PCC would be expected to meet on a six-monthly basis or on an as-needed basis.

36. Trained personnel will be assigned to the PIU's Environment and Social (E&S) Cell. Throughout the construction period, this E&S Cell will assist the PIU on environmental and social management issues,

oversee the Construction Supervision Consultant (CSC), supervise the Contractor(s), and compile quarterly monitoring reports consist with environmental & social monitoring issues and outcome, which will be sent to the Project Director and shared with the World Bank.

37. Though a capacity assessment is not conducted for the BLPA but the agency has a vast experience in implementing several large-scale projects. BLPA is already implementing World Bank-funded project as well as a number of projects funded by the ADB and other donor organizations. The PIU in BLPA is directly involved with project implementation but has more administrative responsibility to ensure other role along with environmental & social compliance.

38. A third-party organization or consulting firm will be responsible for E&S monitoring and they will be engaged before commencement of the construction works, supervised by BLPA. They will train BLPA staff in charge of environmental compliance monitoring during the project's development, operations, and maintenance phases. The environmental monitoring reports will be submitted quarterly during the construction period and annually for two years after completion of construction.

39. In addition, BLPA will hire permanent and periodic Environmental and Social Safeguard Specialists to manage environmental mitigation measures during the operation and maintenance period. The PD will supervise the Environmental and Social Cell of BLPA.

40. The RAP provisions will be overseen and implemented by the Project Manager, whom Environmental and Social Specialists will assist. The whole arrangement will be discussed with BLPA as the existing structures of the BRCP-1 remain. This will be further revised as per requirement according to BRCP-1. A mechanism would be in place to ensure 'disclosures' to and 'engagement' with the stakeholders.

Conclusions & Recommendations

41. The ESIA report has been conducted following the government policies, including national legislative requirements, the World Bank Environmental and Social Framework (ESF) and its relevant Environmental and Social Standards (ESSs). BLPA has demonstrated under the Bangladesh Regional Connectivity Project -1 that it can manage environmental risks and impacts satisfactorily.

42. Land use, air quality, noise quality, water quality, solid waste generation and disposal, increase of traffic and transportation, and occupational health and safety are the main negative environmental consequences projected as the ESIA study outcome. Local job opportunities during the construction and operation phases are favorable. Some design interventions like use of less carbon footprint construction materials, solar energy, use of rain water have been suggested as mitigation measures to reduce the negative impacts. Also a detailed monitoring plan has also been prepared as part of an environmental and social management plan (ESMP).

43. With training and capacity building and specialist support, it is expected that the anticipated environmental and social risks can be effectively managed. The proposed ESMP should be implemented strictly during the project's operation and construction phases and adequately utilize the monitoring cost. The proposed sub-project will meet the national and WB standards if the proposed environmental and social management plan and all E&S instruments can be implemented strictly during the construction and operation phases of the project.

Chapter 1. Introduction

1.1 Background

1. The proposed World Bank-financed Accelerating Transport and Trade Connectivity in Eastern South Asia (ACCESS) – Bangladesh Phase 1 Project; will seek to address the main drivers of the high cost of trade and transport in the sub-region, namely low levels of technology adoption in trade facilitation, inadequate transport, and logistics infrastructure, and regulatory and procedural impediments to the cross-border movement of freight. The Program Development Objective is *to develop efficient and resilient regional trade and transport in the Eastern South Asian countries*. This ESIA outlines the potential consequences and mitigation actions for Phase 1 of the Burimari Land Port development work under Component 2 and sub-component 2a: Resilient land port infrastructure at Benapole, Bhomra and Burimari Land Port.

2. Burimari-Changrabandha is the third largest land border crossing between Bangladesh and India. The land port is situated in the Rangpur Division in northern Bangladesh. The land port caters to 140,000 trucks per year and cannot meet increasing freight flows, leading to congestion and delays in border crossing time. This border is the designated land port for trade to and from Bhutan. The feasibility study and detailed design report for Burimari land port are more advanced than Benapole and Bhomra. The expected infrastructure interventions will include, inter alia, construction of open stack yard, international passenger terminal building, export terminal, warehouse, parking yard, truck terminals, administrative, residential, and dormitory buildings, re-excavation of a dead canal adjacent to the proposed land, bank protection of river and lake, construction of two culverts to connect the existing and proposed land port.

3. The River Dharala is located on the east side and adjacent to the proposed land to expand the land port. A huge Dhighi/Lake is located on the south side of the proposed land, and this lake is seen as a water basin throughout the year. A dead canal from the Dharala River connects to this lake at the north and west side of the proposed land. This canal is entirely silted up now. No flow is observed throughout the year. In the dry season, water flow in the river Dharala is minimum. In monsoon, the discharge in the river is complete, but no flash flood is observed due to rain. Moderate vegetation was observed at the proposed site and around the proposed land site. Around the proposed land, most trees are Bamboo bush, and different types of local fruits, Mango garden, Mehuguni, Akasmuni, Jack fruits, etc., are found within a 1.00 km area. There are some canals and low land but fully silted up. A vast Dhighi/Lake at the south side of the proposed land. The Forest Department of Bangladesh owns no designated forest area. There is some agricultural land within the 1.00 km around the proposed land but no cultivated land in the proposed land. There is a Private College, High School, Primary School, Kinder Garden School, and Madrasha are within 2.00 km around the proposed land. No aesthetic structure is available in and around the project site. A settler from different country regions made their resident around the project site and engaged in different ways of living. No ethnic group/indigenous people were found in and around the project site. Natural fish is available in the nearby River and Dhighi.

Project Components of Burimari Land Port

- Land Filling with sand sourced from designated sites approved by the Government
- RCC Work: Office, Residential, Passenger Terminal, Barrack Building, Road, Drain, Pavement, Open yard, Mat Foundation work
- Brick Work: Boundary wall and all Building work
- Piling Work: Building and Boundary wall
- Warehouse/Transshipment Shed and Yard: RCC foundation with Steel Fabrication works
- Water Supply System: Deep Tube well, Laying of Pipeline, Construction of Pumphouse
- Sanitation System, Waste Management system, Electrical and Security System, Watch Tower
- Implementation Time: 2.0 years
- Probable Project Cost: BDT 425 Crore or USD 50 million

4. The project is expected to include inter alia, construction of open stack yard, international passenger terminal building, export terminal, warehouse, parking yard, truck terminals, administrative,

residential, and dormitory buildings, re-excavation of a dead canal adjacent to the proposed land, bank protection of river and lake, construction of two culverts to connect the existing and proposed land port. The project will increase the port's capacity from the existing 4 acres to 25.5 acres and, in turn, contribute to the national economy. Furthermore, the development effort will boost production and enhance export earnings. This ESIA report covers the possible impacts and their mitigations and monitoring measures and institutional arrangements for the development work of Burimari Land Port under phase 1.

1.2 Purpose of the Environmental and Social Impact Assessment

5. This report is the Environmental and Social Impact Assessment (ESIA) for developing Burimari Land Port, based on a preliminary design prepared by the feasibility and detailed design consultants team of BLPA. The objective of this ESIA is to assess the environmental and social risks and impacts of the development work of the Burimari Land Port and develop measures based on mitigation hierarchy to manage environmental and social risks and impacts.

6. This ESIA is part of the compliance process in accordance with the Government of Bangladesh and the World Bank Environmental and Social Framework (ESF) and its relevant Environmental and Social Standards (ESSs). The ESIA assesses the risks and impacts and provides various environmental and social measures to avoid, reduce, mitigate, and compensate these risks and impacts during the project's preparation, construction, and operation.

7. The ESIA is based on both primary and secondary data and information. The primary data includes data collected from the field, and the secondary data includes a review of statistical and relevant information from the Government and other sources. Discussions and consultations were held with several government institutions, private institutions, NGOs, and community members and representatives shown in Annex E.

8. Following the Department of the Environment (DoE) standards of the Government, the ESIA must also comply by their requirements. This ESIA has been prepared in accordance with the requirements of the GoB defined in the Bangladesh Environment Conservation Act (BECA), Labour Act (2006) & Rules (2015), and the World Bank (WB) ESF as defined in Chapter 2 below.

1.3 Scope of the ESIA

9. The scope of the updated ESIA report describes the following most important features:

- A review of the environmental and social legislative and policy guidelines and considerations relating to the implementation of the project.
- A general description of the sub-project and existing physical, biological, and socio-economic conditions.
- Analysis of different alternatives to the sub-project in environmental and social perspectives.
- Identify and assess the potential impacts on the project's natural and human environment in the sub-project area.
- Consultation with the locals/stakeholder involving concerned people to identify and act on any undocumented or perceived environmental issues.
- Identification of mitigation measures, including monitoring framework in the form of an Environmental and Social Management Plan (ESMP).
- Identification of mitigation measures in the form of an Environmental and Social Management Plan (ESMP).

1.4 Need for the Project

10. The land port of Burimari is in the Rangpur Division's Lalmonirhat District. Changrabandha in the Cooch Behar district is on the Indian side. The land port opened in 2005 and is managed by BLPA. The trucks do not cross through the border, despite proximity to the Burimari Railway Station. The land port is surrounded by a wall that separates it from the surrounding village. There is one sizeable private warehouse outside the land port premises in Burimari hamlet and about 20 smaller warehouses.

11. Burimari-Changrabandha is the designated land port for trade to and from Bhutan. Nowadays, 71,953 Bangladeshi trucks and 70,894 Indian trucks cross the port annually. In 2013-14 passengers from Bangladesh to India were around 3741. In 2018-19 the number increased to 70,708.
12. Burimari Land Port cannot meet increasing freight flows, leading to congestion and delays in border crossing time. The project will enhance the port's capacity and eventually contribute to the national economy. Besides, the development work will improve the export experience and increase productivity.

1.5 Approach and Methodology

1.5.1 Approaches

13. The study has been conducted in accordance with the World Bank Environmental and Social Framework (ESF), ESS 01-ESS10, and relevant environmental and social standards of WB, as well as the the related GoB laws such as Environment Conservation Rules (1997), EIA Guidelines (1997), Labour Act (2006), and Rules (2015). The study is based on both primary and secondary data and information.
14. A comprehensive field visit was undertaken, and several consultations with local communities and potential PAPs were carried out from 10th December 2021 to 13th December 2021 to establish the baseline biophysical conditions within the study area. The data collection was planned per the segmented contract packages for better assessment. The data generated allowed the ESIA team to understand better the complex interplay between the various biotic and abiotic factors within the study area and establish the baseline conditions.

1.5.2 Methodology

15. The primary data includes data collected from field observations, and secondary data includes a review of the Bangladesh statistical and relevant information from Government Departments. For the social baseline, discussions were held with stakeholders, including government officials, community representatives, and a wide range of land port beneficiaries. The main purpose of this approach was to obtain a fair impression of the people's perceptions of the project and its environmental impacts.
16. Once this baseline was established, it was used as a reference point to identify potential environmental changes due to the proposed Sub-Project activities and develop measures to prevent, mitigate, or manage these potential impacts.

1.5.2.1 Primary Data Collection and Analysis

17. Primary data collection was initiated to fill gaps in knowledge resulting from the secondary data review. Further, it is aimed to provide a site-specific data set of relevant physical and biological, environmental, and social aspects relevant to the Project. The primary data collection was undertaken in December 2021. During the field visit, stakeholder consultations were conducted, and several important secondary sources of environmental and social information, data, and literature were collected.
18. The physical environment field survey aimed to identify important environmental and social components and environmental and social issues within the study area. It included investigating and observing the local landforms, adjacent market location, human settlements and habitat types, drainage patterns, species abundance and distribution, soil types, water quality (surface water and groundwater), air quality, noise, vibration, etc. hydro-morphology.
19. The study area and surroundings were surveyed on foot and by boat. Important environmental features were identified and logged. Hand-held geographic positioning systems (GPS) were used to identify specific features for mapping and further analysis. Features that were recorded or ground-truthed (Verified) with GPS included:

- Habitation and settlement areas.
- Cultural Physical Properties (CPR).
- Plantations.
- Habitat areas.
- Sensitive environments.

- Transportation routes.

20. Direct observation and key informant interview (KII) techniques were employed within the field survey, where five FGD's were carried out. Direct observations were subject to accessibility and were guided by satellite image maps and local information. Observations were considering a 1km buffer zone. An environmental observation checklist was completed for each of the areas.

1.5.2.1.1 Field Surveys

21. Sampling and surveys were conducted for aquatic and terrestrial ecosystems to establish a comprehensive baseline. Additional data and samples, where needed, will be collected during the finalization of the ESIA at the detailed design phase.

The following activities were undertaken during the terrestrial and aquatic field surveys.

1.5.2.1.2 Direct Observation

22. Direct observation on the occurrence and abundance of flora and fauna was made considering a 1km buffer zone. As well as direct sightings, identification of animal presence was also based on the identification of tracks, footprints, feeding signs, and animal/bird calls. Appropriate field guides and data proformas were used for this activity to record information accurately.

1.5.2.1.3 Interviews with Local Residents

23. Many mammalian and reptilian species are cryptic and unlikely to encounter standard field sampling methods. Experience suggests that interviews with local people are useful for collecting information on local biodiversity. This data is subjective and should not form the core of any assessment; however, it provides helpful supplementary information. During the field survey period, extensive interviews with local peoples, C&F Agents, NGO workers, teachers, and other beneficiaries of the land port were conducted to collect information on the floral and faunal presence, including occurrences, behavior, breeding, distribution, and distribution seasonal appearance.

1.5.2.1.4 Socioeconomic Field Survey

24. The ESIA study mostly used the socio-economic data collected by the Social and Resettlement Team for social assessment. However, during the environmental survey, some consultations were conducted with the local people on environmental issues where social conditions were also discussed.

1.5.2.1.5 Stakeholder Consultations

25. Focus Group Discussions (FGD) and Public Consultation were conducted along the sub-project intervention area for this report. After briefing the sub-project, experienced professionals (environmental and social) and support teams conducted surveys and consultation meetings. The respondents were selected by random sampling method from each of the locations. Respondents' contact information was collected for further verification if required. For more, please go to Annex- E.

1.5.2.2 Secondary Data Collection and Analysis

26. A review of secondary data collection and informal preliminary field investigations was conducted to prepare a preliminary assessment of the identified study area's physical and social environment, biodiversity, and conservation significance.

- Data and information were collected from various government sources relating to site aspects climate (weather), groundwater quality, and soils; secondary ecological data sources were collected and assessed;
- An appraisal was made of all legislation having direct and indirect relevance to environmental management within the Study Area including aspects such as biodiversity conservation, water quality, waste management, natural resource management, and spill response;
- Previous environmental site studies, where available, were reviewed as well as relevant scientific journal articles; and

- After that, an information gap analysis was undertaken to identify the areas where further primary data collection would be required to complete the ESIA.

1.5.3 Geographical Information Systems (GIS)

27. Geographical Information Systems (GIS) was used as a specialized analysis and presentation tool. Before commencing field investigations, spatial analysis of satellite imagery and present administrative areas and other boundaries/constraints were considered for the environmental assessments. For example, the sanctuaries, forest areas, spawning grounds, infrastructures, and the contract packages were identified. It also supports a more detailed on-ground survey, particularly spatial features that may directly or indirectly influence project activities.

28. Detailed on-ground validation of spatial information – particularly land use – was undertaken using a hand-held, non-differential GPS. The spatial data acquisition team took detailed transect walks through the Sub-project area to identify various land use types and confirm the findings of the satellite imagery analysis. This extensive ground-truthing exercise both validated the land use mapping and identified additional sensitive areas to include within the environmental fieldwork for sampling.

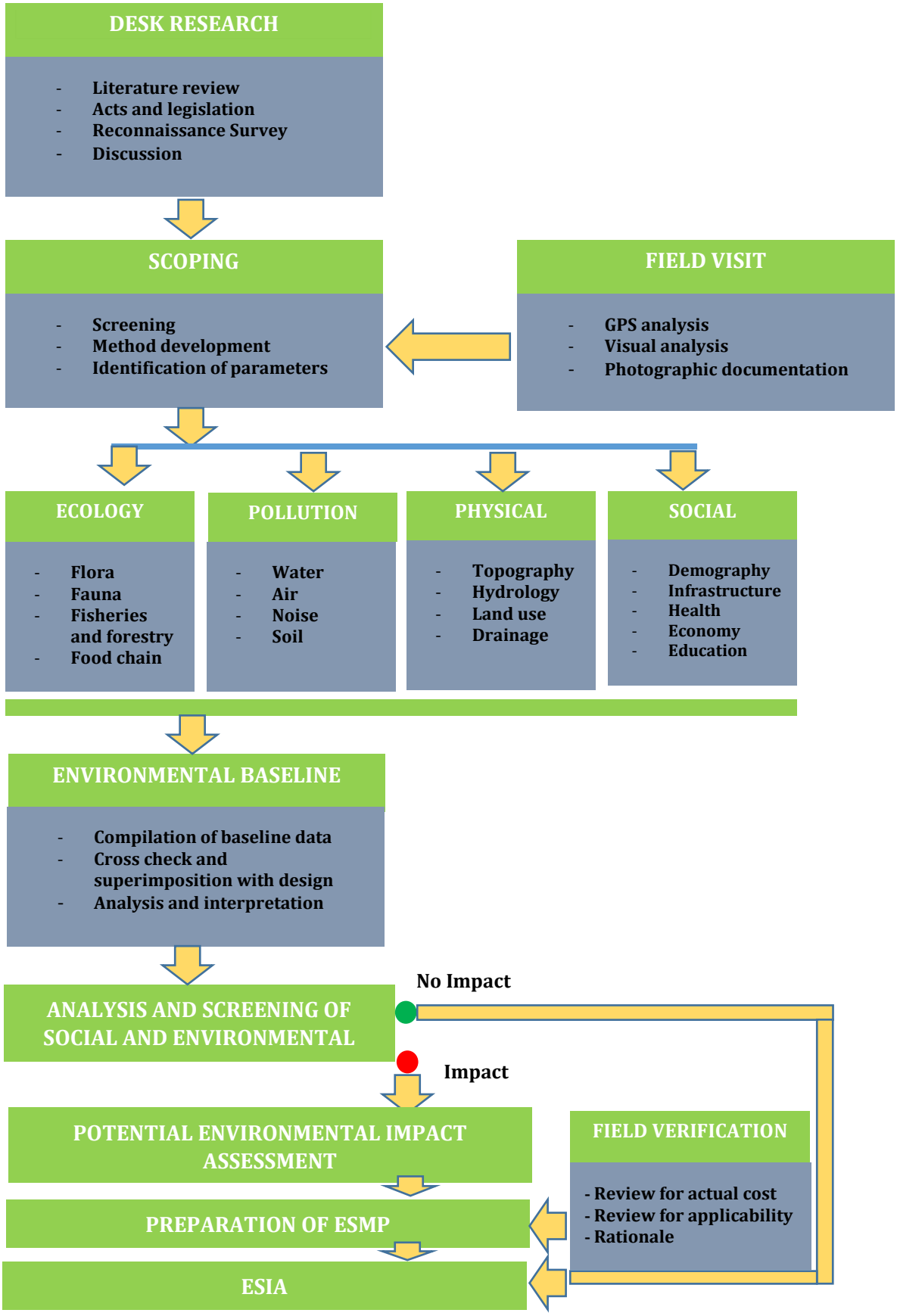


Figure 1.1: Route map of Environmental & Social Impact Assessment (ESIA)

1.5.4 Impact Assessment Methods

29. The ESIA process identifies the potential environmental impacts that may result from implementing the sub-project. Both positive and negative potential impacts for the sub-project were identified by applying standardized international best practice methods of environmental impact assessment. Some of the methods of environmental impact assessment utilized include:

- Ad-hoc methods.
- Application of expert judgment.
- Risk-based approach including residual risk assessment.
- Systematic and sequential approaches and
- Spatial analysis methods (including GIS).

30. Further to these methods, potential impacts were assessed by drawing from the experiences and opinions of local people important stakeholders such as government agencies and through the review of environmental literature and data collection relevant to the Sub-project area.

31. Risk assessment was the principal method for assessing the Project's potential impacts on the biophysical and social environments utilized for this ESIA. Details on the risk assessment process and how it was utilized to identify impacts, the likelihood, and consequences of the actions and implement appropriate mitigation measures to reduce any potential impacts to an acceptable level are detailed in the following sections.

32. According to the proposed map derived from the BLPA, the E&S team conducted a field survey consulted with Burimari Land port Authority and the resident's surroundings; the study area borders have been determined.

1.5.5 Methods for Mitigation and Management

33. Mitigation measures relate to how potential negative impacts associated with the Project may be avoided or reduced to appropriate levels through modifications to the project's design, construction methods, or context. In real terms, 'reducing negative impacts to an appropriate level' means that the potential impacts are reduced to a point where they no longer pose a significant threat to the current or future status of the surrounding natural environment, biodiversity value, and social or economic environment of the region. The mitigation measures have been translated into actions to maintain the environmental integrity of the Sub-project and provide workable solutions. While identifying mitigation measures the GoB standards and WB's relevant EHS guidelines have been considered and stricter ones are applied.

34. An Environmental and Social Management Plan (ESMP) has been developed for each major issue identified and assessed within this ESIA. The ESMP incorporates environmental and social mitigation measures identified in Chapter 6 and forms a practical guide to the ongoing management of all aspects of the Project, including biophysical monitoring and performance criteria auditing for the life of the Project.

1.6 ESIA Team

35. This ESIA report has been prepared with some key professionals. The following table lists the team composition for preparing this ESIA report.

Table 1-1: List of experts in the ESIA Team

SL	Position	SL	Position	SL	Position
1	Sr. Social Development Specialist (Team Leader)	5	Stakeholder Engagement and Communication Expert	9	Surveyor-2
2	Social Development Specialist	6	Labor and Occupational Health and Safety Expert	10	Surveyor-3
3	Environmental Specialist	7	Gender and SEA/SH Expert	11	Surveyor-4
4	Cumulative Impact Assessment Specialist	8	Surveyor-1	12	Surveyor-5

Chapter 2. Policy, Legal and Administrative Frameworks

2.1 Regulatory Requirements for the Project

36. This chapter presents a review of the existing laws and policies related to the environmental and social dimensions of the project. Along with providing a summary of the relevant laws and policies, this chapter presents the World Bank's Environmental and Social Standards (ESS). Gaps between the relevant government laws and World Bank ESS are presented in this chapter and remedial measures to address the gaps.

Table 2-1: Summary of Applicable Regulations of GOB

Sl No.	Policy/Acts/Rules	Key provisions and purpose	Applicability to the Project
1.	National Environmental Policy, 1992	Major elements of the policy are • maintaining the ecological balance for ensuring sustainable development; • protection of the country against natural disasters; • identifying and controlling activities that are polluting and destroying the environment; • ensuring environment-friendly development in all sectors; • promoting sustainable and sound management of natural resources; and • active collaboration with international initiatives related to the environment	The environmental policy aims at prevention of pollution and degradation of resources.
2.	National Environmental Management Action Plan (NEMAP), 1995	The NEMAP was developed with the following objectives: • to identify key environmental issues affecting Bangladesh; • to identify actions to halt or reduce the rate of environmental degradation; • to improve management of the natural environment; • to conserve and protect habitats and biodiversity; • to promote sustainable development; and • to improve the quality of life.	The plan proposes developing and applying guidelines to avoid environmental pollution due to transport and communication system. It emphasizes different environmental pollution, hampers of natural drainage patterns, and agricultural land acquisition due to the development of the transport system.
3.	Environment Conservation Act (ECA), 1995 (with all amendments)	The main objectives of ECA are: • Conservation and improvement of the environment; and • Control and mitigation of pollution of the environment. • The main focuses of the Act can be summarized as: • Declaration of ecologically critical areas and restriction on the operations and processes, which can or cannot be carried out/ initiated in the ecologically critical areas (ECA); • Regulations in respect of vehicles emitting smoke harmful to the environment; • Environmental clearance; • Regulation of industries and other development activities' discharge permits; • Promulgation of standards for quality of air, water, noise, and soil for different areas for different purposes;	According to this law, no industrial unit or project shall be established or undertaken without obtaining an Environmental Clearance Certificate from the Director General in the manner prescribed by rules.

SI No.	Policy/Acts/Rules	Key provisions and purpose	Applicability to the Project
		• Promulgation of a standard limit for discharging and emitting waste; and • Formulation and declaration of environmental guidelines.	
4.	The Water Act, 2013	The Act recognizes the significance of managing all water resources in the natural flow of surface water and recharge of groundwater. The private landowners will use the surface water inside their property for all purposes per the Act. No individuals or organizations will be allowed to extract, distribute, use, develop, protect, and conserve water resources, nor will they build any structure that impedes rivers and creeks' natural flow.	To regulate the water quality during the construction phase
5.	Environment Conservation Rules, 1997 (with all amendments)	The Environment Conservation Rules, 1997, were issued by the GOB to exercise power conferred under the Environment Conservation Act (Section 20), 1995. Under these Rules, the following aspects, among others, are covered: • Declaration of ecologically critical areas; • Classification of industries and projects into four categories; • Procedures for issuing the Environmental Clearance Certificate (ECC); and • Determination of environmental standards.	Following the Environment Conservation Rules (ECR) of 1997, the Project is classified as a Red Category, requiring a complete Environmental and Social Impact Assessment (ESIA) for BLPA to obtain clearance for construction
6.	Environmental Courts Act, 2000	This Act sets out policy for effective pursuance and completion of legal proceedings related to environmental crimes. Under this Act, the Director General of the DoE has the power to impose heavy penalties on industrial polluters who are dumping untreated wastewater into the environment or not operating their legally mandated ETPs.	According to this act, the government can take legal actions if any environmental problem occurs due to project interventions.
7.	National Land Transport Policy, 2004	The objectives of this policy are: • To introduce long-term network planning. • Maintain the road network at a level that protects the value of the investment. • To secure a sustainable means of funding road maintenance. • To improve the management of traffic. • Management of roadside activities. • To develop an integrated planning approach in road construction. • To involve the private sector more in infrastructure, services, and maintenance.	According to the policy, major improvements, tolled or otherwise, are subjected to an Environmental and Social Impact Assessment (ESIA).
8.	Wetland Protection Act, 2000	The latest Wetland Act -- The Playground, Open Spaces, Gardens, and Wetland Conservation Act 2000 -- suffers from loopholes and inadequacies regarding the protection of water bodies. Section 1 of this Act suggests that it applies to the water bodies of the cities, divisional and district towns, and municipalities. The water bodies in the rural areas are outside the jurisdiction of this Act	The Act specifies the fine and imprisonment term for violation of its provisions. It does not direct the government to recover the original characteristics of the water bodies if someone fills them up.
9.	The Forest Act (1927) and the	It is the main legislative context for forestry protection and management in Bangladesh. It	The Act is relevant to the sub-project as construction of the

SI No.	Policy/Acts/Rules	Key provisions and purpose	Applicability to the Project
	Forest (Amendment) Act (2000)	was enacted to control trespass illegal resources extraction from forests and to provide a framework for the forestry revenue collection system	project intervention will require cutting some trees.
10.	National Forest Policy (amendment), 1994	The policy is designed to conserve the existing forest areas, bring about 20 % of the country's land area under the Forestation Programme, and increase reserve forests by 10 percent per year to 2015.	The Act is relevant to the sub-project as construction of the project intervention will require cutting some trees.
11.	The Private Forests Ordinance, 1959	An Ordinance to provide for the conservation of private forests and the afforestation in some wetlands in Bangladesh.	According to Section 61 of this Ordinance, any land is required for any of the purposes of this Ordinance; such land shall be deemed to be needed for a public purpose.
12.	Bangladesh Wildlife (Conservation & Security) Act, 2012 (previously known as Bangladesh Wildlife (Preservation) Order, 1973; amended as Bangladesh Wildlife (Preservation) Act, 1974	This Act protects 1,307 species of plants and animals under four schedules that mandate imprisonment and fines for wildlife poaching, capturing, trapping, and trading.	This Act is relevant to the sub-project as an intervention may affect wildlife habitation obstruct movement.
13.	National Water Policy, 1999	The policy emphasizes efficient and equitable management of water resources, proper harnessing and development of surface and groundwater, availability of water to all concerned, and institutional capacity building for water resource management	Measures must be taken to minimize disruption to the natural aquatic environment in streams and water channels (Clause 4.9b).
14.	National Fisheries Policy, 1998	National Fisheries Policy focuses on aquaculture and marine fisheries development. The policy suggests, among others, that biodiversity will be maintained in all-natural water bodies and marine environment, and control measures will be taken against activities that harm fisheries, resources, and vice-versa	The project required proper action to prevent biodiversity in all-natural water bodies and the aquatic environment.
15.	Protection and Conservation of Fish Act 1950 (Amended 1982)	This is framework legislation with rulemaking powers. Among others, some of these rules may prohibit the destruction of, or any attempt to destroy, fish by the poisoning of water or the depletion of fisheries by pollution, by industrial effluent, or otherwise.	The project requires proper action to prevent biodiversity in all-natural water bodies and the marine environment.
16.	National Agriculture Policy, 1999	This policy aims to make the nation self-sufficient in food through increasing production of all crops, including cereals, and ensure a dependable and secure food system for all	Due to project intervention's construction activities, adequate measures should be taken to reduce water-logging and hamper the irrigation system.
17.	National Land Use Policy, 2001	The main contents of this policy are: • Stopping the high conversion rate of agricultural land to nonagricultural purposes;	The proposed project must adhere to this policy to ensure the environmental

SI No.	Policy/Acts/Rules	Key provisions and purpose	Applicability to the Project
		• Utilizing agro-ecological zones to determine maximum land-use efficiency; • Adopting measures to discourage the conversion of agricultural land for urban or development purposes; • Improving the environmental sustainability of land-use practices.	sustainability of land-use practices.
18.	The Embankment and Drainage Act, 1952	It provides provision for the construction, maintenance, management, removal, and control of embankments and watercourses for the better drainage of lands.	Disposal of dredged spoil may create drainage obstruction. So, adherence to the relevant section of the Act must be addressed in the environmental and social assessment.
19.	Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009	This is a comprehensive strategy to address climate change challenges in Bangladesh. Bangladesh Climate Change Strategy and Action Plan built on and expanded the NAPA.	Relevant as the sub-project area is vulnerable to climate change effect
20.	Constitution of the People's Republic of Bangladesh, 04 November 1972	Bangladesh's Constitution defines the rights of every citizen irrespective of their ethnicity and religion where the State is responsible for the provision of Basic Necessities for the citizens	This is applicable to ensure the health and safety of the laborers and project-related persons.
21.	The Acquisition and Requisition of Immovable Property Act 2017 (ARIPA)	It is the principal legislation governing eminent domain land acquisition in Bangladesh. The Act requires that compensation be paid for: (i) land and assets permanently acquired (including standing crops, trees, houses); and (ii) any other damages caused by such acquisition. The Act also provides the acquisition of properties belonging to religious organizations like mosques, temples, pagodas, and graveyards if acquired for the public interest. The Ministry of Land (MoL) is the authorized government agency to undertake the process of land acquisition. The MoL partly delegates its authority about the land acquisition to the Commissioner at the Divisional level and the Deputy Commissioner at the District level. The Deputy Commissioners (DC) is empowered by the MoL to process land acquisition under the act and pay compensation to the legal owners of the acquired property. Khas (government-owned land) should be acquired first when a project requires both Khas and private land. If a project requires only khas land, the land will be transferred through an inter-ministerial meeting following the acquisition proposal submitted to DC or MoL. The Government of Bangladesh does not have a national policy on involuntary resettlement. The new Act of 2017 has incorporated specific provisions to address social and economic impacts that were not previously included in the 1982 land acquisition ordinance. Therefore these provisions under the new law would reduce the gaps between	The nature of the civil works related to the project will entail the land acquisition and subsequent economic and physical displacement. ARIPA 2017 defines the land acquisition process and contains appropriate compensation paid to titleholders.

SI No.	Policy/Acts/Rules	Key provisions and purpose	Applicability to the Project
		the national legislative framework of the government and WB policies.	
22.	Bangladesh Land Port Authority Act, 2001	Legislation to establish a land port to facilitate and improve the import and export of goods by land and establish a land port authority for its operation, management, development, expansion, and preservation. Section 19 of this act reveals the acquisition or acquisition of land for authority.	To expand the land port area, additional land needs to acquire; hence this law reveals that If any land is required to perform the functions of the Authority, it shall be deemed necessary in the public interest, and for this purpose, it may be acquired or acquired in accordance with the provisions of The Acquisition and Requisition of Immovable Property Ordinance, 1982 (II of 1982).
23.	Labor Related Laws	Standards for labor and Working Conditions are defined in the Labor Act 2006; Bangladesh Labor Rules 2015; and Occupational Health and Safety Policies 2013. The Bangladesh Labor Act 2006 is a comprehensive legislation and addresses three areas: (i) Conditions of service and employment including wages and payment, the establishment of Wages Boards, employment of young people, maternity benefits, working hours, and leave; (ii) Health, safety, hygiene, and welfare, and compensation for injury; (iii) Trade unions and industrial relations. The law applies to all "establishments," which are defined broadly to include shops, hotels, restaurants, factories (though these must employ more than five laborers), plantations, docks, transport services, construction sites, and "any premises in which laborers are employed to carry on any industry." It covers Contractors (and its operations at construction sites); however, it is unclear if the law applies to development project organizations that are "ad hoc" and with co-terminus staff. The Public Procurement Rule 2008 requires Contractors to (a) take all reasonable steps to safeguard the health and safety of all workers working and other individuals authorized to work on-site; (b) to keep the site in an orderly state; and (c) to protect the environment on and off the site;(iv) to avoid damage or nuisance to persons or property of the public or others resulting from pollution, noise or other causes arising as a consequence of the Contractors methods of operation.	To carry out the civil works, labor will be required to be hired. Therefore, these laws will be triggered to safeguard the interest of the labor, host community, project authorities, Contractors, and other project stakeholders. The project will ensure that the stipulations of the law are duly followed when it comes to labor-related activities
24.	Community Health and Safety Related Laws	The management of community health and safety of development projects is covered under ECA and ECR. Typically, OHS measures extend to	During the construction period, community health and safety are likely to be

SI No.	Policy/Acts/Rules	Key provisions and purpose	Applicability to the Project
		the general public at construction sites. There are two components of CHS. One is the physical safety of project communities exposed to the project activities during construction and operation, including risks of accidents and violence due to increased crimes and cultural conflict between locals and migrant populations. The other pertains to the community's exposure and increased risks of diseases due to the influx of people during construction and operation and the changes in the sub-project area, including pollution and ecological change. The OHS provisions of the Labor Act partly address the physical safety aspects. Traffic road accidents are a severe issue in Bangladesh, and Road safety issues have been incorporated in Some road Improvement projects.	impacted negatively. These laws aim to protect the interest of individuals and communities impacted by the project. The ESIA includes the possible impacts and their mitigations.
25.	Cultural Heritage	The Antiques Law of 1968 law consolidates all laws relating to the preservation and protection of antiquities under the auspices of the Department of Archaeology. The law empowers the Director of the Department of Archaeology to take steps necessary for antiquity's custody, preservation, and protection. The Environment Conservation rules (1997) states that GoB will consider the presence of human habitat, ancient monuments, or archeological sites, among other factors, in declaring an area as ecologically critical.	Project activities may lead to unearthing antiques or impact cultural heritage by chance. Therefore, laws related to cultural heritage and antiques apply to this project to protect these finds.
26.	Stakeholder Engagement and Information Disclosure	The DoE guidelines for IEE/EIA preparation guidelines encourage the implementing agency to conduct public consultations of orange-B and red category projects. The current environmental and social framework in Bangladesh does not recognize public consultation as a means for environmental decision-making. Implementing agencies present the outcome of their assessment in the IEE/EIA reports, which they submit to the DoE for clearance. However, opportunities for the public to review the final/completed IEE/EIA report are under the discretion of the Director-General of the DoE. The DoE does not officially disclose EIA report findings publicly on their website. However, public reports are standard practice when carrying out donor projects, and DoE is cognizant.	Stakeholder engagement is an important instrument of public policy, and these regulations/laws aim to make the development project inclusive by giving voice to the communities. The anticipated civil work makes it necessary to implement stakeholder engagement. The current EIA system in the country does not have the scope for public consultation and disclosure. Therefore, guidance from ESS10 will underpin the project's stakeholder engagement and information disclosure requirements.

SI No.	Policy/Acts/Rules	Key provisions and purpose	Applicability to the Project
27.	The Building Construction Act 1952 (with subsequent amendments)	An Act to provide for the prevention of haphazard construction of building and excavation of tanks which are likely to interfere with the planning of certain areas in Bangladesh	Applicable as the project involves the development of infrastructure
28.	Bangladesh National Building Code 2020	The purpose of the Code is to establish minimum standards for design, construction, quality of materials, use and occupancy, location, and maintenance of buildings within Bangladesh to safeguard, within achievable limits, life, limb, health, property, and public welfare.	Applicable as the project involves building construction activities.

2.2 World Bank Environment and Social Framework and Standards (ESS)

37. Since October 1, 2018, all World Bank-funded Investment Project Financing (IPF) projects must adhere to the Environmental and Social Framework (ESF), which consists of ten (10) environmental and social standards (ESS). These ESSs detail the borrowers' responsibilities to identify and assess any project's environmental and social risks and impacts.

38. Through ongoing stakeholder engagement, the ESSs assist borrowers in achieving good international practice in environmental and social sustainability, assisting them in fulfilling their national and international environmental and social obligations, increasing transparency and accountability, and ensuring a sustainable development outcome[1].

39. The importance of ESF Policy, each of the ten standards (ESS1 to 10), and the related Directive are discussed in the sections below; their criteria are shown in Table 2.2. It also covers the relevance and requirements of previous World Bank guidance papers. If Bangladeshi law differs from ESF criteria, more stringent requirements will apply.

Table 2-2: Applicability of the ESSs to the Project

World Bank ESS Policy, Standards, Directive	Objectives	Requirements	Relevance to the sub-project/project and Actions to be taken
ESS-1 Assessment and Management of Environmental and Social Risks and Impacts	Identify, assess, evaluate, and manage environmental and social risks and impacts in a manner consistent with the ESF. Adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and they are	E&S risk and impacts should be considered in the environmental and social assessment. The use and strengthening of the Borrower's environmental and social framework for assessing, developing, and implementing World Bank-financed projects where appropriate.	(I) Project components will be thoroughly screened to ensure that they are covered by and meet the requirements of ESS and Government laws and regulations. (II) E&S risks and Impacts have been identified in the ESIA based on surveys and consultations with primary stakeholders, including communities and implementing agency

[1] Annex A provides a detailed description of the ESS of the WB.

World Bank ESS Policy, Standards, Directive	Objectives	Requirements	Relevance to the sub-project/project and Actions to be taken
	not disadvantaged in sharing development benefits and opportunities	**Relevant GoB Laws/Regulation** (a)ECA 1995 (b)ECR 1997, EIA guidelines for Industries **Gaps** (i)The EIA screening and scoping study may not comprehensively cover all of the WBs ESS in their analysis (I Stakeholder engagement is carried out during the EIA. However, the nature of the stakeholder engagement is limited in scope. The EIA report is also not publicly disclosed (iii) The EIA framework doesn't require the analysis of alternatives	(III) The ESIA will be disclosed both on the BLPA and Bank's websites.
ESS-2 Labor-and-Working-Conditions	Promote safety and health at work. Promote fair treatment, non-discrimination, and equal opportunity for project workers. Protect project workers, with particular emphasis on vulnerable workers. Prevent the use of all forms of forced labor and child labor. Support the principles of freedom of association and collective bargaining of project workers consistent with national law. Provide project workers with accessible means to raise workplace concerns.	Requirements for the Borrower to prepare and adopt labor management procedures. Provisions on the treatment of direct, contracted, community, and primary supply workers and government civil servants. Requirements on terms and conditions of work, non-discrimination, equal opportunity, and workers' organizations. Provisions on child labor and forced labor. Requirements on occupational health and safety, in keeping with the World Bank Group's Environmental, Health, and Safety Guidelines (EHSG). **Relevant GoB Laws/Regulation** a) Labor Act 2006 (Amendment 2013) b) Occupational Health and Safety Policy 2013 c) Public Procurement Rule 2008 **Gaps** (i) The labor act does not make it mandatory for development interventions to be assessed and reviewed in terms of labor	The project will be hiring the following types of workers: i) (i) Direct workers will include the project managers, and consultants, who are being contracted for the project by BLPA; (ii) Contracted workers -all the workforce deployed by the Contractors will be deemed to be contracted workers. The Contractor(s) might further engage multiple sub-contractors; and (iii) Primary Supply Workers: workers engaged by firms for sourcing the aggregates and raw materials for the project A labor management procedure has been prepared to regulate working conditions and management of workers relations, including worker specific GRM, terms and conditions of employment, non-discrimination and equal opportunity, SEA/SH, protection of workforce, the prohibition of child /forced labor and provision of OHS

World Bank ESS Policy, Standards, Directive	Objectives	Requirements	Relevance to the sub-project/project and Actions to be taken
		and working conditions, including OHS, before approval. (ii) The labor act does not require development projects to prepare labor management plans/procedures or OHS Plan.	
ESS-3 Resource-Efficiency-and-Pollution-Prevention-and-Management	Promote the sustainable use of resources, including energy, water, and raw materials. Avoid or minimize adverse impacts on human health and the environment caused by pollution from project activities. Avoid or minimize project-related emissions of short and long-lived climate pollutants. Avoid or minimize the generation of hazardous and non-hazardous waste. Minimize and manage the risks and impacts associated with pesticide use. Requires technically and financially feasible measures to improve efficient energy consumption, water, and raw materials and introduces specific requirements for water efficiency where a project has high water demand.	Requires an estimate of gross greenhouse gas emissions resulting from project (unless minor), where technically and financially feasible. Requirements for managing wastes, chemical and hazardous materials, and provisions address historical pollution. ESS-3 refers to national law and Good International Industry Practice, in the first instance the World Bank Groups' EHSGs. **Relevant GoB Laws/Regulation** a) Environment Conservation Act (ECA) 1995 b) Noise Pollution Rules (2006)	Concerning Resource Efficiency, the project preparation and the ESIA process identified feasible measures for efficient (a) energy use; (b) water usage and management to minimize water usage during construction. ESS-3 refers to national law and Good International Industry Practice, in the first instance the World Bank Groups' EHSGs. And for this ESIA and ESMP, the stricter standards have been considered.
ESS-4 Community-Health-and-Safety	Anticipate or avoid adverse impacts on the health and safety of project-affected communities during project life-cycle from routine and non-routine circumstances. Promote quality, safety, and climate change considerations in infrastructure design and construction, including dams. Avoid or minimize community exposure to project-related traffic and road	Requirements on infrastructure, considering safety and climate change and applying the concept of universal access, where technically and financially feasible. Requirements on traffic and road safety, including road safety assessments and monitoring. Addresses risks arising from impacts on provisioning and regulating ecosystem service. Measures to avoid or minimize the risk of water-related, communicable, and non-communicable diseases.	Use of vibratory equipment, construction debris handling, and disposal, etc. during construction; ii) likelihood of direct exposure to increased construction related traffic and equipment sensitive receptors such as schools, religious places, health center/hospitals; iii) dust levels from earthworks, noise, and emission level from traffic congestion and idling of vehicles; and iv) influx of migrant workers could potentially cause local discomfort or potential conflicts

World Bank ESS Policy, Standards, Directive	Objectives	Requirements	Relevance to the sub-project/project and Actions to be taken
	safety risks, diseases, and hazardous materials. Have in place effective measures to address emergency events. Ensure that safeguarding personnel and property is being carried out to avoid or minimize risks to the project-affected communities.	Requirements to assess risks associated with security personnel and review and report unlawful and abusive acts to relevant authorities. **GoB Laws and Regulation** a) National Road Transport Act b) ECR 1997 c) BLA 2006 d) Public Procurement Rule,2008 e) Water Act 2013 **Gaps** (i) Health issues are under the purview of MoHFW. However, MoHFW is not involved in project preparation and oversight	with local people as well as pose SEA/SH risks. BLPA may use direct or contracted workers to provide security to safeguard its personnel and property. It will assess the risks posed by the arrangements to those inside and outside the project site. BLPA will be guided by the principle of proportionately and GIIP and the relevant laws related to hiring, rules of conduct, training, and equipping such workers. BLPA will not permit the use of force in providing security except when it is used for defensive purposes and is in proportion to the nature of the threat. BLPA will ensure that government security personnel are deployed and act in the described manner. Discussing the security arrangement with the public is also encouraged. The gaps between GoB regulations and ESS-4 will be addressed through suitable provisions in the ESMP and the Contractor's obligation as part of the Contractor's ESMP. This should also include OHS plan, influx management plan, workers camp management plan, traffic and road safety management plan, and SEA and SH plan
ESS-5 Land-Acquisition-Restrictions-on-Land-Use-and-Involuntary-Resettlement	Avoid or minimize involuntary resettlement by exploring project design alternatives. Avoid forced eviction. Mitigate unavoidable adverse impacts from land acquisition or restrictions on land use by providing compensation at replacement cost and assisting displaced persons in their efforts to improve, or at least	Applies to permanent or temporary physical and economic displacement resulting from different types of land acquisition and restrictions on access. It does not apply to voluntary market transactions, except where these affect third parties. Provides criteria for "voluntary" land donations, sale of community land, and parties obtaining income from illegal rentals. Prohibits forced eviction (removal against the will of affected people, without	A small amount of land acquisition will be required for expansion, upgradation of the existing port area in the identified area, and possibly for rehabilitation works, curve/geometric improvements, blind spots, etc. Hence impacts on land, private, and community-owned assets, including structures, trees, and crops within the existing and proposed area of activities are likely. Physical and economic displacement is very likely.

World Bank ESS Policy, Standards, Directive	Objectives	Requirements	Relevance to the sub-project/project and Actions to be taken
	restore, livelihoods and living standards to pre-displacement levels or to levels prevailing before the beginning of project implementation, whichever is higher. Improve living conditions of poor or vulnerable persons who are physically displaced by providing adequate housing, access to services and facilities, and security of tenure. Conceive and execute resettlement activities as sustainable development programs.	legal and other protection including all applicable procedures and principles in ESS5). Requires that acquisition of land and assets is initiated only after payment of compensation and resettlement has occurred. Requires community engagement and consultation, disclosure of information, and a grievance mechanism. **GoB Laws and regulation** Acquisition and Requisition of Immovable Property Act, 2017 **Gaps** (i) Preparation of SIA and RAP not required (ii) Does not provide compensation or assistance to those who are non-title holders (iii)Does not have provisions to include transitional allowances for the restoration of livelihoods for informal settlers (iv) focused on cash compensation which may be viewed as a short-term strategy; however, involuntary resettlement can cause long term impacts. ARIPA does not include sustainable or inclusive developmental objectives) No special provisions specific groups such as the vulnerable groups of the population (vi) Valuation of lost asset is not based on replacement cost principle	Important gaps (between ESS and GoB policy) exist in determining compensation, identifying non-titleholders, cut-off dates for non-title holders, and valuation of structures with depreciation. These gaps and other short- and long-term mitigation measures are included in the project RPF based on which a site-specific RAP will be prepared later.
ESS-6 Biodiversity-Conservation and Sustainable Management of Living Natural Resources	Protect and conserve biodiversity and habitats. Apply the mitigation hierarchy and the precautionary approach in designing and implementing projects that could impact biodiversity. To promote the sustainable management of living natural resources.	Requirements for projects affecting areas that are legally protected designated for protection or regionally/internationally recognized to be of high biodiversity value. The requirements for sustainable management of living natural resources, including primary production and harvesting, distinguish between small-scale and commercial activities. Requirements relating to	These issues have been addressed in the ESIA. A detailed guideline has been given in the ESIA preparation section. [The section on Biological Environment 'Section 4.4' covers all the aspects related to ESS6].

World Bank ESS Policy, Standards, Directive	Objectives	Requirements	Relevance to the sub-project/project and Actions to be taken
		primary suppliers, where a project purchases natural resource commodities, including food, timber, and fiber. **Relevant GoB Laws/Regulation** a) Biodiversity Conservation Act- 2017 b) National Land use policy, 2001 c) National Agriculture Policy, 1999.	
ESS-7 Indigenous-Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Ensure that the development process fosters full respect for affected parties' human rights, dignity, aspirations, identity, culture, and natural resource-based livelihoods. Promote sustainable development benefits and opportunities accessible, culturally appropriate, and inclusive. Improve project design and promote local support by establishing and maintaining an ongoing relationship based on meaningful consultation with affected parties. Obtain the Free, Prior, and Informed Consent (FPIC) of affected parties in three circumstances. Recognize, respect, and preserve Indigenous Peoples' culture, knowledge, and practices and provide them with an opportunity to adapt to changing conditions in a manner and in a timeframe acceptable to them.	Applies when the Indigenous Peoples are present or have a collective attachment to the land, whether they are affected positively or negatively regardless of economic, political, or social vulnerability. The option to use different terminologies for groups that meet the criteria set out in the Standard. The use of national screening processes, providing these meet World Bank criteria and requirements. Coverage of forest dwellers, hunter-gatherers, pastoralists, and other nomadic groups. Requirements for meaningful consultation tailored to affected parties and a grievance mechanism. There are requirements for a free, prior, and informed consent process in three circumstances.	This ESS is not relevant to this sub-project. No Indigenous people communities have been identified in the project area.
ESS-8 Cultural-Heritage	Protect cultural heritage from the adverse impacts of project	Requires a chance finds procedure to be established. Recognition of the need to	Based on the preliminary assessment, the sub-project area does not have any ancient

World Bank ESS Policy, Standards, Directive	Objectives	Requirements	Relevance to the sub-project/project and Actions to be taken
	activities and support its preservation—Address cultural heritage as an integral aspect of sustainable development. Promote meaningful consultation with stakeholders regarding cultural heritage. Promote the equitable sharing of benefits from the use of cultural heritage.	ensure peoples' continued access to culturally important sites and the need for confidentiality when revealing information about cultural heritage assets that would compromise or jeopardize their safety or integrity. Requirement for fair and equitable sharing of benefits from the commercial use of cultural resources. Provisions of archaeological sites and materials, built heritage, natural features with cultural significance, and moveable cultural heritage. **GoB Laws/Regulation** (a)National Culture Policies (b)Antiques law 1968 **Gaps** (i)Barring ESIA and ESMP, no clear strategy or requirement is defined to manage the effect of development interventions on cultural heritage.	monuments and the archaeological site(s) protected. However, in the detailed design stage, it will be investigated in detail and will try to avoid the sites, if any is found. If they (antiques/cultural heritage) are found, they must be relocated, and provisions must be made in the ESMP. The chance find procedures will be incorporated in the ESMP, and chance find clauses will also be incorporated in work contracts requiring Contractors to stop construction Although the current alignment does not have heritage sites or archaeological sites, the project will likely impose a negative externality on mosques/madrasas and cemeteries. To address this, the World Bank mitigation hierarchy will be followed.
ESS-9 Financial-Intermediaries	Sets out how Financial Intermediaries (FI) will assess and manage environmental and social risks and impacts associated with the sub-projects it finances. Promote sound environmental and social management practices in the sub-projects the FI finance. Promote good environmental and sound human resources management within the FI.	Financial Intermediaries (FIs) to have an Environmental and Social Management System (ESMS) - a system for identifying, assessing, managing, and monitoring the environmental and social risks and impacts of FI sub-projects on an ongoing basis. FI to develop a categorization system for all sub-projects, with special provisions for sub-projects categorized as high or substantial risk. FI borrowers to conduct stakeholder engagement proportionate to the risks and impacts of the FI sub-projects.	Not relevant as there is no financial intermediary involved.
ESS-10 Stakeholder-Engagement-and-Information-Disclosure	Establish a systematic approach to stakeholder engagement that helps Borrowers identify stakeholders and maintain a constructive relationship. Assess stakeholder interest and support for the project	Require stakeholder engagement throughout the project life cycle and prepare and implement a Stakeholder Engagement Plan (SEP). Requires early identification of stakeholders, both project-affected parties and other interested parties, and	The sub-project will involve many stakeholders during the project cycle. The sub-project will ensure: I) Relevant stakeholders for the project are correctly identified.

World Bank ESS Policy, Standards, Directive	Objectives	Requirements	Relevance to the sub-project/project and Actions to be taken
	and enable stakeholders' views to be considered in project design. Promote and provide means for effective and inclusive engagement with project-affected parties throughout the project life-cycle. Ensure that appropriate project information is disclosed to stakeholders in a timely, understandable, accessible, and appropriate manner.	clarification on how effective engagement occurs. Stakeholder engagement is conducted proportionate to the project's nature, scale, risks, and impacts and appropriate to stakeholders' interests. Specifies what is required for information disclosure and to achieve meaningful consultation. **GoB Laws/Regulation** Right to Information Act, 2009 **Gaps** i)The EIA framework does not require consultation, and hence the scope of consultation is minimal.	II) Stakeholders have been consulted during the preparation of the SEP. (III) Stakeholders' engagement plan has been prepared to follow during the implementation of the project.

2.3 World Bank Group Environmental, Health and Safety Guidelines

40. The Environmental, Health, and Safety (EHS) Guidelines of the World Bank Group (WBG) 2008 contain performance levels and measures achievable in new facilities at reasonable costs using existing technologies. The EHS guidelines have been organized into four major categories: (a) Environment, (b) Occupational Health & Safety, (c) Community Health & Safety, and (d) Construction & Decommissioning. All the stakeholders of the sub-project (particularly the client BLPA and the Contractor) can follow the general approach (illustrated in the IFC General EHS guidelines) to managing EHS issues at the facility or Project level.

41. When host country regulations differ from the levels and measures presented in the EHS Guidelines, projects are expected to achieve whichever is more stringent. If less stringent levels or measures than those provided in these EHS Guidelines are appropriate because of specific project circumstances, a complete and detailed justification for any proposed alternatives is needed as part of the site-specific environmental assessment.

2.4 Gap Analysis of World Bank Requirements and National Laws

42. As part of the E&S capacity assessment of IAs, a gap analysis between WB's ESSs and GoB Regulations was performed. The gap analysis revealed that Bangladesh's E&S risk assessment and management system for development projects are open-ended and do not cover all of the World Bank ESF's ES Standards. The ECA/ECR does not even define the scope of the ESIA study (or the IEE), leaving that to the ESIA preparation to determine through initial assessment/screening.

43. The scope of the ESIA study would thus be typically determined by the expertise of the EIA team or the DoE reviewers in any government-funded project. There is no guarantee that each ES Standard (1-8 and 10) is taken into account in the ESIA study and the development of the ESMP. Even though the ESIA is heavily weighted toward environmental issues, more and more social issues are being incorporated into the assessment.

44. Furthermore, the practice does not include labor management issues under normal circumstances. Another critical gap is the absence of provisions requiring the development of project-specific ES management plans. In the case of non-titled entities/persons, the current eminent domain land acquisition system in Bangladesh, for example, does not require the preparation of a RAP.

45. In addition, the projects are not required to develop their own Labor Management Procedures/Plans. Because of the gaps, this ESIA will adhere to the most stringent standards and requirements. Table 2.3 below provides an overview of the gaps between GoB laws and WB's ESSs, as well as steps to close those gaps.

Table 2-3: Gaps Between GoB Laws and World Bank ESSs

WB ESF Standard	Gaps	Equivalent National Environmental Policy and Regulation	Gap Minimization Measures
ESS1: Assessment and Management of Environmental and Social Impacts and Risks	(i) EIA study screening and scoping does not guarantee to cover all ESS standards in the assessment. (ii) EIA study does not advocate to include both the environment and social impacts at the same scale, but the ESF does. (iii) The stakeholder engagement during the conduct of the EIA is limited, and the EIA report is not disclosed. (iv) The EIA system in Bangladesh does not require analysis of alternatives. (v) There are no associated facilities for the project.	Environmental Impact Assessment (EIA) ECA 1995 (amendment in 2000, 2002 & 2010 and Environmental Conservation Rules, 1997	ESIA has suggested following the ESS1 requirements, given in the relevant sections of Environmental Management Procedures. This ESIA's scoping is conducted to address WB ESSs in addition to GoB requirements. The basic principle of ESF, which is the mitigation hierarchy (avoid, minimize, mitigate, offset), is considered in this ESIA and the project design.
ESS2: Labor and Working Conditions	(i) The Labor Act does not explicitly require that development be assessed and reviewed regarding labor and working conditions, including OHS requirements, before approval. (ii) The Labor Act does not require development projects to prepare Labor Management Plans/Procedure or OHS Plan.	Bangladesh Labor Act, 2006 (amended in 2013, 2015, and 2018) and Bangladesh Labour Rules, 2015.	An OHS plan including traffic safety for the workers should be developed during the project implementation. This ESIA has included a guideline for developing Site-Specific Management plans, including LMP & OHS.
ESS3: Resource Efficiency and Pollution Prevention and Management	Existing energy and water conservation policies, laws, and regulations do not require development projects to assess resource efficiency issues and incorporate them into their ES risk management plans.	• Environment Conservation Act (ECA) 1995 • Noise Pollution Rules (2006)	ESS3 covers all pollution aspects, including water, air, dust, noise, etc., which are the major environmental aspects. The WB EHS guideline contains the performance levels and measures generally acceptable to the World Bank Group and generally considered achievable in new facilities at reasonable costs by existing technology. ESIA to be developed for each IA's components to address this issue and

			incorporate mitigation measures for efficient use of water resources.
ESS4: Community Health and Safety	Covered under ESIA, but the systems do not provide precise requirements for the development project and implementation. Health issues are within the purview of MHFW, but it is currently not involved in project preparation and oversight.	• Noise Pollution Rules (2006) • Environment Conservation Rules 1997	Guideline for Community Health Safety has been addressed in the EMP. These issues are also described in detail in LMP and SEA/SH/GAP.
ESS5: Land Acquisition, Land Use Restriction, and Involuntary Resettlement	Bangladesh: ARIPA (i) does not require RAP preparation in the case of non-titled entities. (ii) does not provide compensation or assistance to those who do not have a formal legal claim to the land; (iii) does not provide transitional allowances for restoration of livelihoods for informal settlers; (iv) relies on cash compensation, no developmental objectives; (v) no provision to give special attention to the vulnerable groups (vi) valuation of lost asset is not based on "replacement cost' standard	The Land Acquisition/ Requisition of Immovable Property Ordinance, 1982 Act	An RPF is prepared, which will be followed in the project. There will be site-specific RAPs, and both RPF and RAPs will consider ESS5 requirements.
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	No equivalent requirements on (i) the application of the hierarchy of measures; (ii) the preparation of Biodiversity Management Plan; (iii) differentiated measures on types of habitats; (iii) conducting due diligence on primary suppliers.	Biodiversity Conservation Act- 2017 National Land use policy, 2001 National Agriculture Policy, 1999.	These issues have been addressed in the ESIA. A detailed guideline has been given in the ESMP preparation section. Besides, site-specific management plans will be prepared for each sub-project/activity. The section on Biological Environment 'Chapter 4.4' covers all the aspects related to ESS6
ESS7: Indigenous People	No equivalent requirements on (i) coverage of IP impacts in the ESIA; (ii) special treatment or differentiated approach to IPs and vulnerable groups; (iii) conduct of FPIC; (iv) development of IP Plan.		No SEC has been identified during the ESIA preparation stage, and ESS7 is not relevant to this sub-project.

ESS8: Cultural Heritage	No equivalent requirements on (i) the application of the hierarchy of measures; (ii) the development of Cultural Heritage Management Plan; (iii) the development and adoption of project-specific Chance Find Procedures; and (iv) the engagement of cultural heritage experts.	National Culture Policies 2006 and Antiques law 1968	The detailed guideline has been included in the ESMP section.
ESS9: Financial Intermediaries	Not applicable to the country system. Project proponents, regardless of funders, are subject to the same country's laws.		N/A
ESS10: Stakeholder Engagement and Information Disclosure	The ECA/ECR does not explicitly require consultation, but the ESIA guidelines issued by DOE and other agencies recommend public consultations during scoping and the preparation of the ESIA. There is also no provision for any stakeholder engagements during project implementation	Right to Information Act, 2009	A guideline for stakeholder engagement has been provided in this ESIA, and a standalone SEP has been prepared and implemented throughout the life of the project.

Chapter 3. Project Description

3.1 Description about ACCESS Program

46. The World Bank is preparing the Accelerating Transport and Trade Connectivity in Eastern South Asia (ACCESS) project, to respond to the multifaceted transport and trade facilitation challenges in the ACCESS sub-region. The Program utilizes the Multiphase Programmatic Approach (MPA). It will seek to address the main drivers of the high cost of trade and transport, namely low levels of technology adoption in trade facilitation, inadequate transport and logistics infrastructure, and policy, regulatory, and procedural impediments that constrain the cross-border movement freight.

47. The ACCESS Program – Phase 1 Bangladesh will finance the modernization of Benapole, Bhomra, and Burimari land ports (BLPA), and Chattogram Customs House and Chattogram Training Academy (NBR) into green and climate-resilient facilities. These are Bangladesh's most important gateways for regional and global trade, measured by volume and value of trade and truck volumes.

3.2 Land Port Development and Border Management Improvement (BLPA)

3.2.1 Upgrading of Benapole, Burimari, and Bhomra land ports

48. This sub-component will support the upgrading of infrastructure facilities of Benapole, Bhomra, and Burimari land ports, which are critical for trade with India and with Bhutan and Nepal. Infrastructure modernization will be premised on digitalization, contact-free, and paper-free processing. The project will ensure holistic development of the land ports, underpinned by enhanced border agency collaboration and coordination (including with India) and improved border management.

- *Benapole-Petrapole* is the most extensive land border crossing in South Asia regarding freight traffic and value of goods. It handles about 80 percent of the total trade with India through land routes. The modernization of the land port would reduce congestion and enhance truck flows from India at Petrapole Integrated Check Post (ICP). Currently, the Petrapole ICP can handle 700-750 export trucks but clears only 370 trucks as the present infrastructure, systems, and processes at Benapole do not match the facilities of its Indian counterpart. The area to be developed amounts to 50 acres.

- *Bhomra-Ghojadanga* is the second-largest land port between Bangladesh and India. The Land Port has seen increasing demand due to congestion at Benapole-Petrapole. Demand is expected to increase with the Padma Multipurpose Bridge, as Bhomra is the shortest route from Kolkata to Dhaka. The traffic forecast indicates future annual growth of 8 percent. Traffic demand for trucks is forecasted at 1,650 per day by 2030, more than double the current traffic.

- *Burimari Land Port* cannot meet increasing freight flows, leading to congestion and delays in border crossing time. Burimari-Changrabandha is the designated land port for trade to and from Bhutan.

3.2.2 Development of Automated Border Management System

49. This sub-component will support the development of a new multi-agency Automated Border Management System platform to increase the visibility of the trade chain and reduce costs and unnecessary interactions with cargo shipments. This automated system is especially relevant in the context of COVID-19, where it has become imperative to reduce face-to-face interactions and reduce manual processes. It will seek to improve BLPA and other border management partners within the regulatory requirements. For example, effective administrative and operational processes by BLPA, such as cargo handling, storage, tariff calculation, and levy payment procedures, while not related to regulatory obligations, also contribute to the overall efficiency of cross-border trade flows. Thus, modernizing regulatory and non-regulatory processes, automating them, and subsequently looking for

opportunities to share valuable data amongst border management partners (including India) will contribute to trade flow efficiencies and trade chain health and security.

3.2.3 Technical Assistance to enable contemporary trade facilitation practices

50. This sub-component will finance long-term master plans, feasibility design studies, and environmental and social safeguard studies for priority land ports considered for financing in subsequent phases (e.g., Banglabandha, Hili, Sonahat, Bilonia, Tamabil, Bholaganj, Darshana, and other land ports). Support will also be provided to build the capacity of BLPA staff in modern border management practices.

3.3 Objectives of the Project

51. The proposed Project Development Objective is "to augment trade-enabling infrastructure, technology, and processes to improve the conditions for regional transport and trade in Bangladesh." Outcome indicators would measure progress towards the achievement of the objectives, including among others:

a) Reduced transit times at priority border points [Percentage change]
b) Increased efficiency of transport mobility for passengers and goods on sections of the ACCESS regional road network [Percentage change]
c) Reduced variability in transport costs due to extreme climate events [Percentage change]

3.4 Description of Burimari Land Port

3.4.1 Existing facilities in Burimari Land Port

52. Burimari land port is situated at Burimari Union in Patgram sub-district. It is the 3rd largest land port of Bangladesh. In 1988 Burimari land port was established at Burimari zero point for import and export goods with India, Bhutan, and Nepal by roadway. It is bounded west by India (Burimari land port), on the north by India, on Srirampur Union, on the south, and on the east by Patgram Union. Dharala river flows north of 8 no. Burimari Union, originates from Changrabandha in India, and joins Tista. The total area is 23.22 sq km.

53. The existing Burimari land port infrastructure is in a poor state and insufficient to accommodate existing and potential trade volume. The inadequate infrastructure results in transport and clearance delays for traded goods at Bangladesh's border as the border gets busier day by day.

54. The sub-project will have substantial environmental and social impacts. This summary document of Environmental Impact Assessment (ESIA) describes the most important environmental and social impacts for the land port construction/ reconstruction and associated works, which will entail a small but considerable land acquisition and resettlement effort. Planning efforts have been going on to assess and develop mitigation measures against these impacts.

55. These measures are described and included in environmental and social action plans, including implementation schedules, budgets, responsibilities, institutional requirements, and monitoring plans. These measures are developed in line with domestic laws and regulations in Bangladesh and relevant policies of the World Bank.

Table 3-1*:* Existing facilities in Burimari Land Port

Area	**23.22 sq km.**
Population	22,335 (Both Male and female)

	Ward Number	Population
	1	5152
	2	2850
	3	3350
	4	6490
	5	5560
	6	8685
	7	3370
	8	3655
	9	4120
Voters:	13,359 (both men and women).	
Communication facilities:	Railways and roads, paved roads of the Union, 26 km.	
Educational Institutions:	2 High Schools, 6 Government Primary Schools, and 5 Registered Primary Schools.	
Health	The union has 1 sub-health center, 2 community clinics, and 1 medical center.	
River	Dharala river	
Natural Resources	This union is famous for its pebbles	
Places of interest	Burimari land port and Sector 7 headquarters of the great liberation war	
Import Item	Using this land port, Bangladesh import coal, wood, Timber, Stone, Cement, China clay, Ball clay, Quartz, Chemical fertilizer, Cosmetic content, Animal food, Variety kinds of fruits, onion, garlic, ginger, rice, pulse, wheat, verity kinds of seeds, etc.	
Export	Hilsha fish, Melamine, and some others goods.	

3.4.2 Proposed Development Activities

56. **Project Components of Burimari Land Port**

- Land Filling: Source of filling materials, quality of materials, from where those materials will be collected
- RCC Work: Office, Residential, Passenger Terminal, Barrack Building, Road, Drain, Pavement, Open yard, Mat Foundation work
- Brick Work: Boundary wall and all Building work
- Piling Work: Building and Boundary wall
- Warehouse/Transshipment Shed and Yard: RCC foundation with Steel Fabrication works
- Water Supply System: Deep Tube well, Laying of Pipeline, Construction of Pumphouse
- Sanitation System, Waste Management system, Electrical and Security System, Watch Tower
- Implementation Time: 2.0 years
- Probable Project Cost: BDT 425 Crore or USD 50 million

3.5 Design Features

57. The final design and layout are not final. Despite being data gap, some specific information related to construction activities have been extracted from BLPA, which are given below:

Specification for Building			
Item	**No.**	**Type**	**Area**
Office	1	Floor: 4-storied	Sqm: 2000 per floor
Residential	2	Floor: 4-storied	Sqm: 300 per floor
Land Filling			
Item	**Amount/Remarks**		
Earthwork's volume	**3 lac cum if filling ht is 3meter,**		
Source of filling material	**Surrounding riverbed. To be finalized by the Design Team.**		

Boundary wall	
Item	**Amount/Remarks**
Length of the boundary wall	**1200 meter**
Height of the boundary wall	**Minimum 15 ft from FGL**
Width of the boundary wall	**Thickness 15 and 10 inch**
Water Supply System	
Item	**No./ Amount/Remarks**
Number of Pump House	**1 no**
The yield of the Wells	**300 meter**
Estimated daily production	**1000 liters daily**
The capacity of the water reservoir	**100000 liters**
Length of the pipeline route	**2000 meter**
Item	**No./ Amount/ Remarks**
Number of watchtowers	**6 nos**
Height of the watchtower	**12 meters**
Electrical design	**Street light, tower, electric tower, over the boundary wall in the operational area, underground cable laying**
Requirement of electricity	**100 KVA**
Capacity of warehouses	**15000 sqm**
Open Stockyard capacity	**81000 sqm**
Area of Transshipment Sheds	**5000 sqm**
RCC Works	**3,15,000 cum**
The thickness of the pavement	**300 mm**
Amounts of steel required	**36000 mton**
Length of internal road network	**1500 meter**
Width of Internal Road Network	**21 meter**
Length of the drainage network	**2500 meter**
Type of internal drains	**RCC**

3.6 Implementation Schedule

58. It is expected that the implementation time of the sub-project will be 2.0 years.

3.7 Project Cost

59. The probable project cost is BDT 425 Crore or USD 50 million.

Figure 3.1: **Project Location Map**

Chapter 4. Natural and Socio-Economic Features of the Project Area

4.1 General

60. The baseline environmental quality is assessed through field studies within the impact zone for various components of the environment, air, noise, water, soil land and socio-economic, etc. The primary objective of identifying and describing existing environmental conditions is to understand the baseline conditions before undertaking any development activities.

61. Data was collected from secondary sources like BBS 2011, BWDB, BMD, WB Climate change portal, etc., for the macro-environmental setting like climate (temperature, rainfall, humidity, and wind speed), physiography, geology, etc. Firsthand information has been collected to record the micro-environmental features within and adjacent to the sub-project area. Primary information collection includes extrapolating environmental features on proposed project design, tree inventories, location, and measurement of socio-cultural features adjoining the proposed sub-project area.

62. The following section describes the baseline environment in three broad categories, Physical Environment- factors such as geology, climate, and hydrology; Biological Environment- factors related to life such as flora, fauna, and ecosystem; and Socio-economic and Cultural Environment- anthropological factors like demography, income, land use, and infrastructure.

63. The impact zone is determined while surveying the proposed sub-project area and consultation with local people and other stakeholders. The sensitive receptors and pollution sources have been considered to determine the impact zone from the environmental perspective. On the other hand, the impact zone is not confined to the Burimari area from a social perspective. As the proposed sub-project will increase the port's existing facilities, economic advancement will be generated.

4.2 Project Influence Area

64. As the overall risk categorization of the sub-project is 'Substantial,' the area of influence (AOI) for the overall sub-project is considered a 1 km area around the proposed land port facilities. In addition, for more intensive study, the area is considered a 5 km buffer zone. Within this buffer zone, the whole area was anticipated to comprise many stone crusher machines, markets, educational institutions, religious institutions, etc. The area is always busy with frequent traffic movements, loading and unloading activities, and other activities; hence, noise generation may be expected in the future construction stage. It is believed that the impacts would not extend beyond the boundary of this AOI by taking proper precautionary measures.

4.3 Physical Environment

4.3.1 Climate

65. The sub-project area falls in the Northern Part of the Northern Bangladesh. Although less than half of Bangladesh lies within the tropics, the presence of the Himalaya Mountain range has created a tropical macroclimate across most of the east Bengal landmass (Rashid, 1991). Brammer (Brammer, 1996) has identified four (04) distinct seasons resulting from this weather pattern, namely –

66. **Northern Part of the Northern Region:** This is an area of extremes. In summer, the mean maximum temperature is well above 32°C, whereas in winter, the mean minimum is below 10°C. The summer is dry, with a scorching westerly wind, but the rainy season is very wet, with 2,000 to 3,000 mm of rainfall.

4.3.1.1 Temperature

67. The study areas are located near to Rangpur meteorological station. These temperature values are derived from the temperature data from 1989 to 2019 of the Bangladesh Agricultural Research Council.

68. The monsoon starts in April or May and continues until September to October. During the monsoon, the temperature varies between 35.05°C and 36.47°C. In winter, the temperature falls below 9°C, spread over December and January, including November and February. The highest temperature is felt during May, when the temperature may be as high as 32.30°C. Figure 4.2 shows the variation of maximum, average, and minimum temperature of Rangpur station that can represent the temperature of the study area.

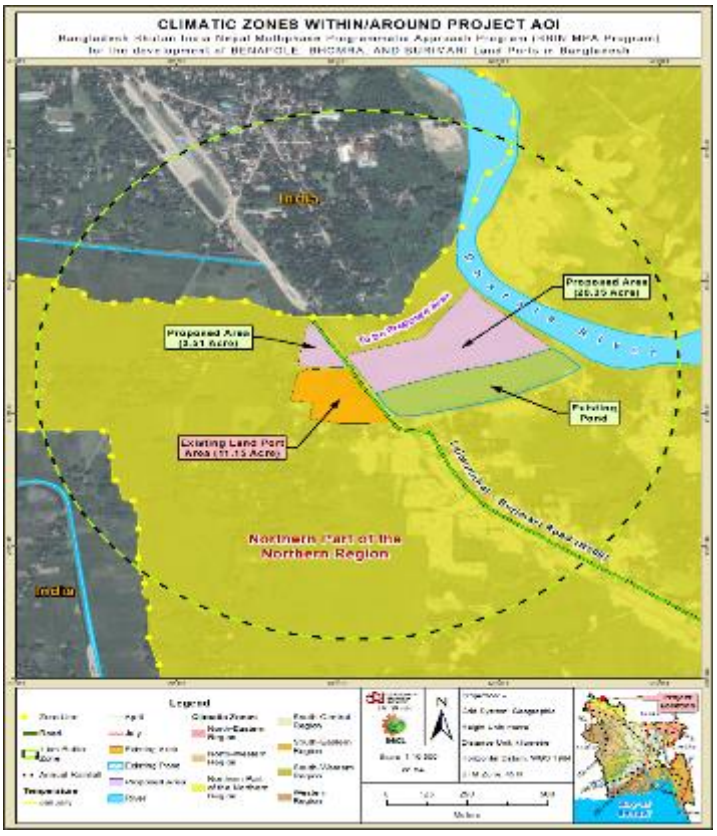


Figure 4.1: Climatic Zones of Bangladesh

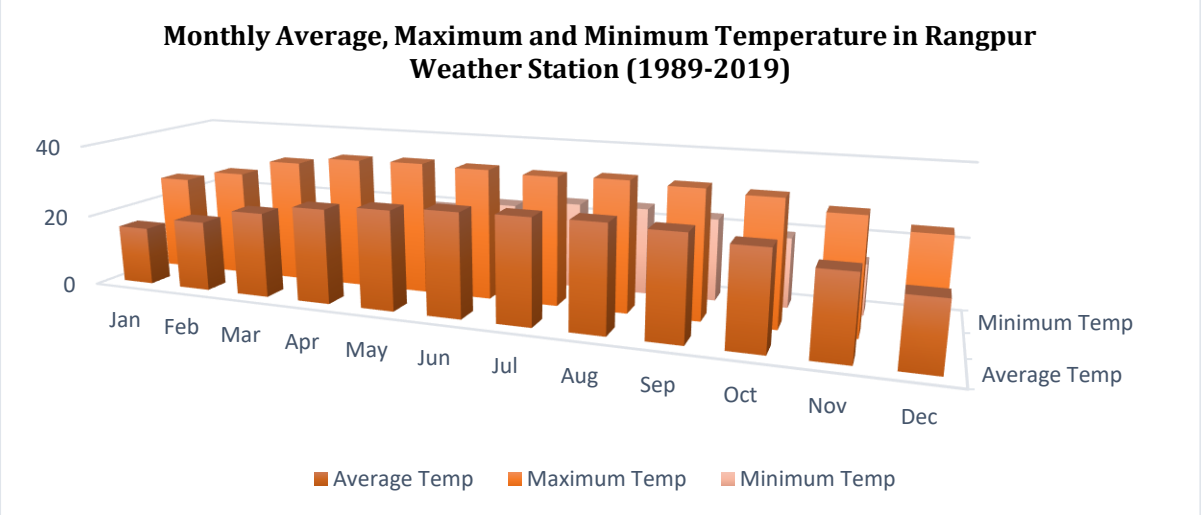


Figure 4.2: Variation of Monthly Surface Air Temperature of Rangpur Station (Ref: BMD)

4.3.1.2 Rainfall

69. Figure 4.3 The rainfall data obtained from the Rangpur weather station shows that the highest rainfall occurs in June, and the lowest rainfall occurs in December during the winter season. From the figure, the highest average recorded rainfall was 421.71 mm in June. The lowest average recorded rainfall was found in December, 4.16 mm.

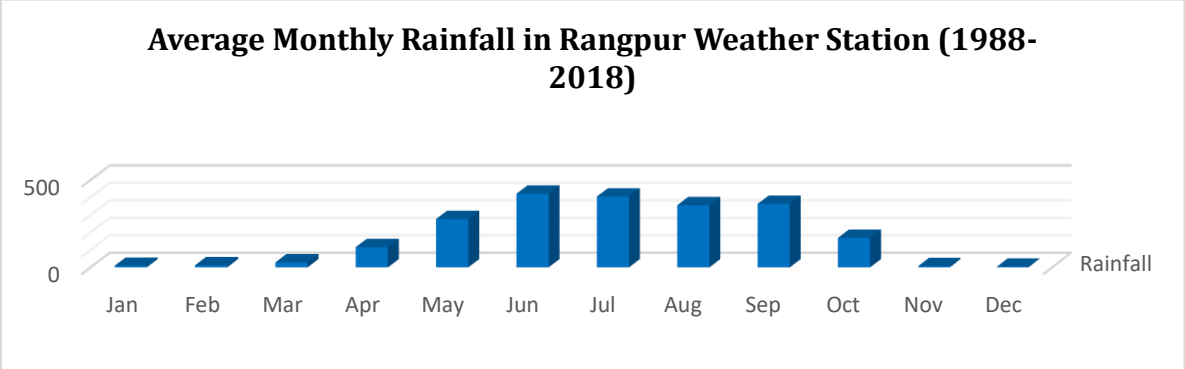


Figure 4.3: Average of Total Monthly Rainfall in mm in Rangpur Weather Station (Ref: BMD)

4.3.1.3 Wind Speed

70. Figure 4.5 shows the average wind speed from 1989 to 2019 at Rangpur station. Wind speed in the study area represents seasonal variation between the dry season (October to January) and the monsoon season (April to August) in both stations. From October to January, the wind speed shows a lower value. This season shows 2.77 to 3.38 ms-1 wind speed, and from April to July, the wind speed shows 3.93 to 3.29 ms^{-1} in Rangpur station.

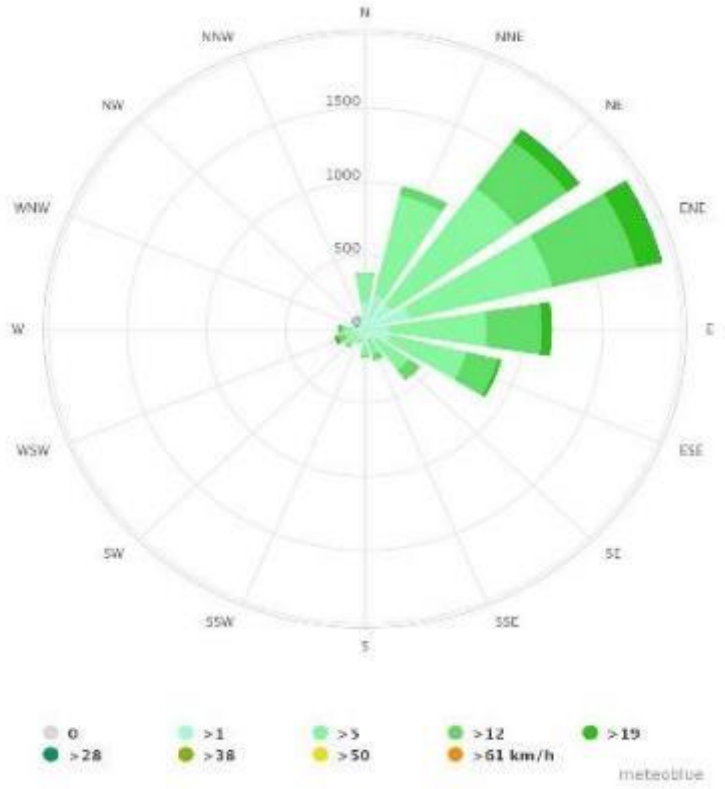


Figure 4.4: Average Monthly Wind Speed at Rangpur Station (Ref: Meteoblue)

4.3.1.4 Humidity

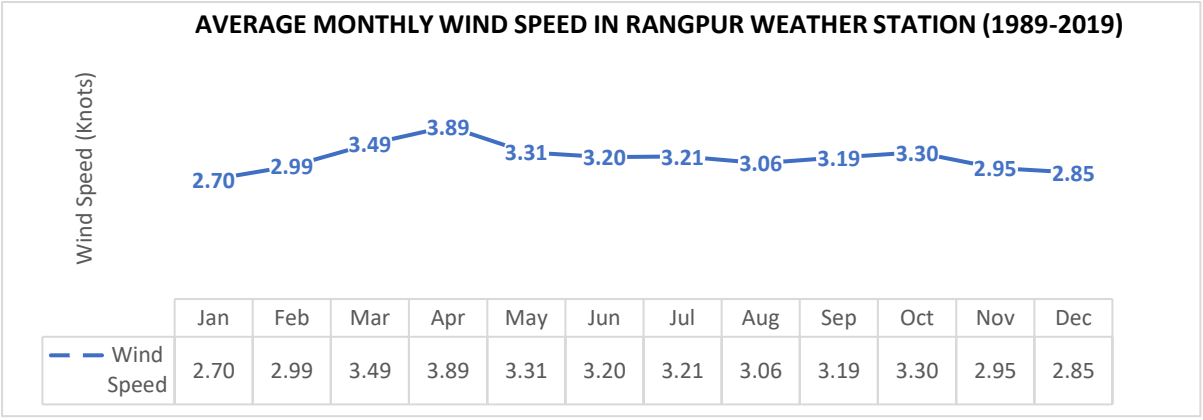


Figure 4.5*: Average Monthly Wind Speed of Rangpur Weather Station (Ref: BMD)*

71. In the summer, humidity remains high, but it is low in the winter. The statistical data of humidity at Rangpur station from 1989 to 2019 shows that humidity in Rangpur station peaks from April to October each year, ranging from 75 to 86 percent. During the winter months of February, March, and April, humidity in the Rangpur station drops by 69 percent. (See Figure 4.6).

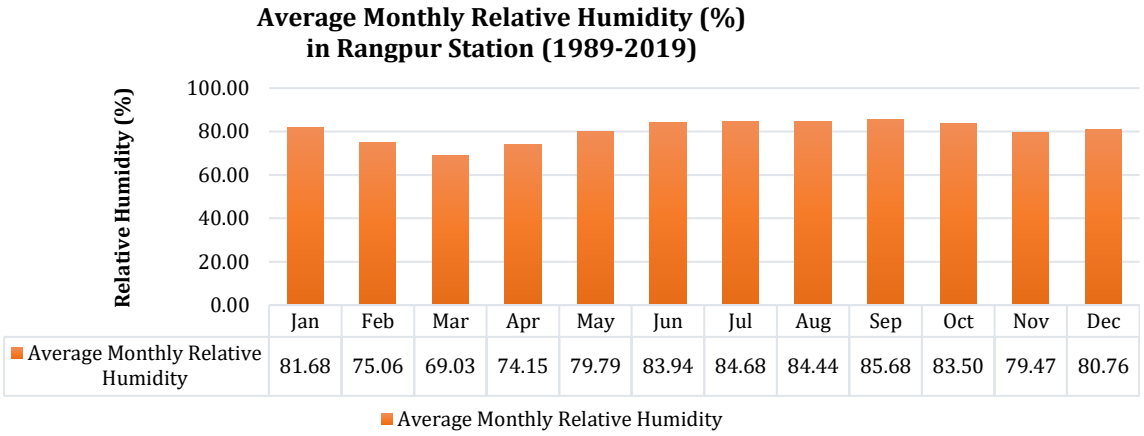


Figure 4.6: Average Monthly Relative Humidity (%) in Rangpur Station (Ref: BMD)

4.3.1.5 Climate Risks and Projections

72. Climate change is the significant variation of average weather conditions becoming, for example, warmer, wetter, or drier—over several decades or longer. It is the longer-term trend that differentiates climate change from natural weather variability. Bangladesh is one of the most vulnerable countries regarding climate change impacts. Climate change projections delineate the risks and extreme weather events.

73. Mean temperatures across Bangladesh are projected to increase between 1.4°C and 2.4°C by 2050 and 2100, respectively. This warming is expected to be more pronounced in the winter months (December-February). Average temperatures are expected to increase between 1°C and 2°C by 2100, with similar rates of warming projected to occur across the country.

74. The study area is in the Burimari is located in the Lalmonirhat district of the Rangpur division. As there is no weather station in the Lalmonirhat district, this report considered the closest weather station, which is in Rangpur., where Projected Max-Temperature Anomaly for 2020-2039 (Annual) is 0.770 c (Ref. Period: 1995-2014), SSP1-8.5). This can have potential heat stress impacts on workers in the sub-project area. The Projected Precipitation Anomaly for 2020-2039 (Annual) is 49.01mm (Ref. Period: 1995-2014), SSP5-8.5, Multi-Model Ensemble). This can have potential flooding/water logging issues in the sub-project area.

4.3.2 Physiography

75. Bangladesh can be categorized into three major categories in terms of physiography, depending on topography, physical features, and geological history (Brammer, 1996) – i) Floodplains, ii) Terraces, iii) Hills

76. The sub-project regions are part of the Old Himalayan Piedmont Plain (Figure 4.7).

77. The sub-project falls into the Old Himalayan Piedmont Plain, consisting of gently sloping ground at the foothills with colluvial and alluvial deposits deposited by rivers and streams from the hills. The Old Himalayan Piedmont Plain runs into Bangladesh in the country's northwestern region, encompassing the entire Thakurgaon district and significant portions of the Panchagarh and Dinajpur districts. Piedmont sands and gravels deposited as alluvial fans of the Mahananda and Karatoya rivers and their distributaries originating in the Terai area at the foot of the Himalayas cover this region. Although the piedmont deposits could be late Pleistocene or early Holocene, they are younger than the Madhupur clay.

Figure 4.7: Physiographic unit within the project AOI

78. The drainage pattern resembles that of a braided river, with large, smooth, but uneven ridges intersected by several broad, shallow channels that branch out and reconnect often. The Tista left this terrain a long time ago, and the area appears to have been raised since then, with tiny rivers crossing the plain now entrenched up to 6 meters deep (in the north; less in the south) below the plain's main level. This plain gently dips south from around 96m to 33m above MSL (mean sea level).

4.3.3 Hydrology

79. The hydrology of the Dharala River was collected from the Hydrology Department of Bangladesh Water Development Board (BWDB). The daily data were analyzed, and each year's minimum, average, and the maximum value was identified and tabulated. In 2011 the water level values were less than the rest of the years. Although, the values did not fluctuate much over the years. The minimum and maximum water level is 56.69 m (2008) and 60.89 m (2017). The yearly minimum, average and maximum detail data with date are presented in Table 3.3. The water quality of the Dharala river is also a concern when construction activities occur within the sub-project area. The baseline water quality of the Dharala river has been analyzed, as shown in chapter 4.3.6.3.

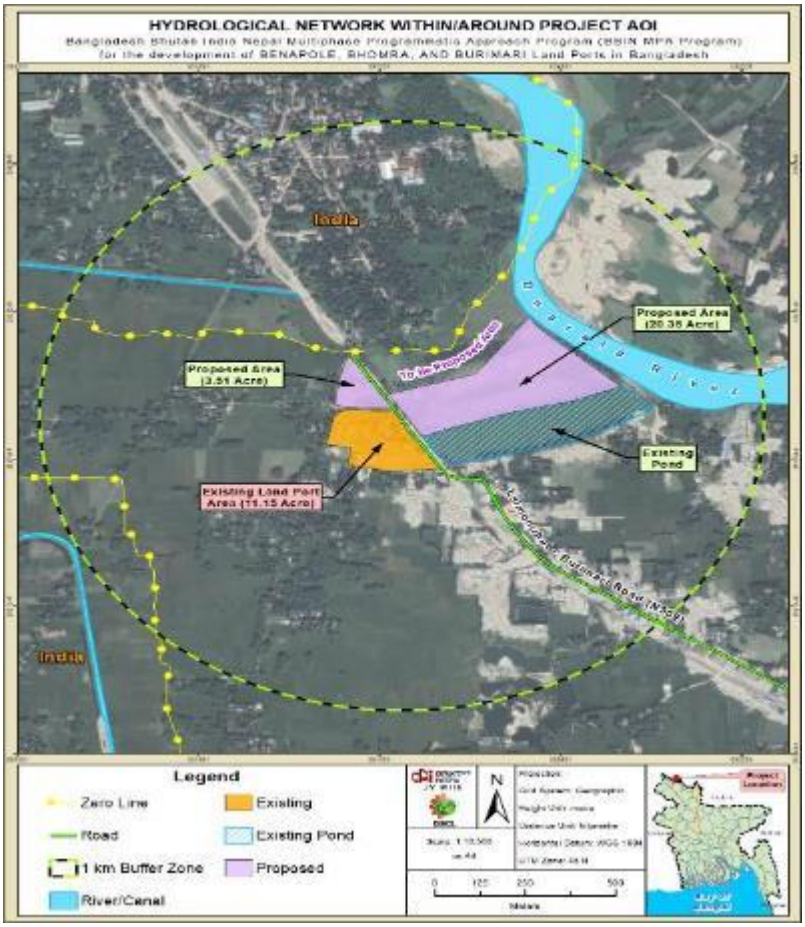


Figure 4.8: Hydrological Network within/around the project AOI

Table 4-1: Hydrological Data of Dharala River

RIVER NAME	Station ID	Station Name	Year	Av. Water Level (m)	Maximum Water Level(m)	Minimum Water Level(m)
Dharala	SW75	Patgram	1990	57.79	59.27	57.31
Dharala	SW75	Patgram	1991	57.94	60.64	57.29
Dharala	SW75	Patgram	1992	57.81	59.43	57.46
Dharala	SW75	Patgram	1993	57.82	60.12	57.14
Dharala	SW75	Patgram	1994	57.48	59.31	57.12
Dharala	SW75	Patgram	1995	57.61	59.72	57.28
Dharala	SW75	Patgram	1996	57.43	59.26	57.06
Dharala	SW75	Patgram	1997	57.51	59.69	57.17
Dharala	SW75	Patgram	1998	57.98	60.20	57.27
Dharala	SW75	Patgram	1999	57.95	60.28	57.49
Dharala	SW75	Patgram	2000	58.00	60.47	57.51
Dharala	SW75	Patgram	2001	57.99	59.51	56.95
Dharala	SW75	Patgram	2002	57.66	60.20	56.89
Dharala	SW75	Patgram	2003	58.30	59.70	57.55
Dharala	SW75	Patgram	2004	57.79	60.24	57.48
Dharala	SW75	Patgram	2005	58.01	59.97	57.47
Dharala	SW75	Patgram	2006	57.84	59.79	56.94
Dharala	SW75	Patgram	2007	57.27	59.87	56.74
Dharala	SW75	Patgram	2008	57.30	59.49	56.69
Dharala	SW75	Patgram	2009	57.58	59.20	56.97
Dharala	SW75	Patgram	2010	57.88	59.81	57.01
Dharala	SW75	Patgram	2011	57.05	57.77	56.90

RIVER NAME	Station ID	Station Name	Year	Av. Water Level (m)	Maximum Water Level(m)	Minimum Water Level(m)
Dharala	SW75	Patgram	2012	57.34	58.56	56.73
Dharala	SW75	Patgram	2013	58.13	58.88	57.86
Dharala	SW75	Patgram	2014	58.27	60.27	57.76
Dharala	SW75	Patgram	2015	58.34	59.87	57.97
Dharala	SW75	Patgram	2016	58.17	60.20	57.43
Dharala	SW75	Patgram	2017	58.11	60.89	57.42
Dharala	SW75	Patgram	2018	58.40	60.56	58.03
Dharala	SW75	Patgram	2019	57.95	59.75	57.52

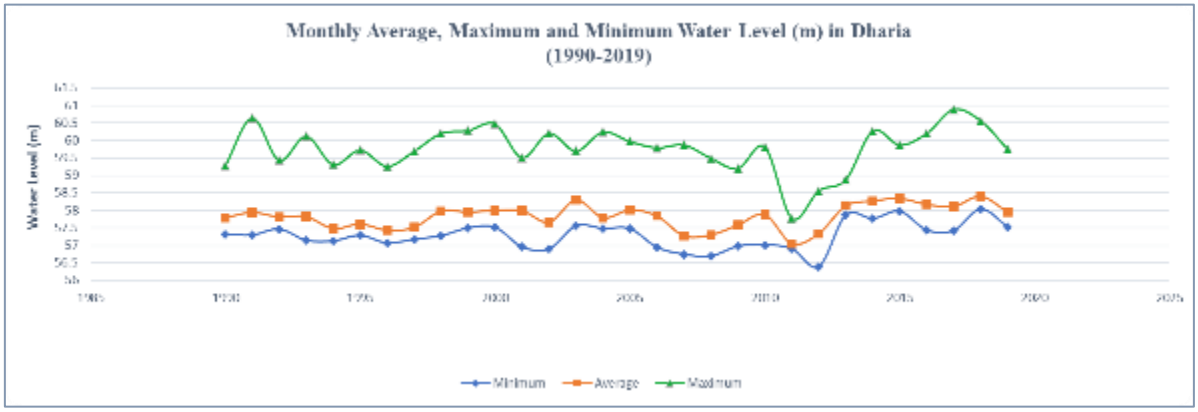


Figure 4.9: Monthly Average, Maximum and Minimum Water Level in Dharala River (Ref: BWDB)

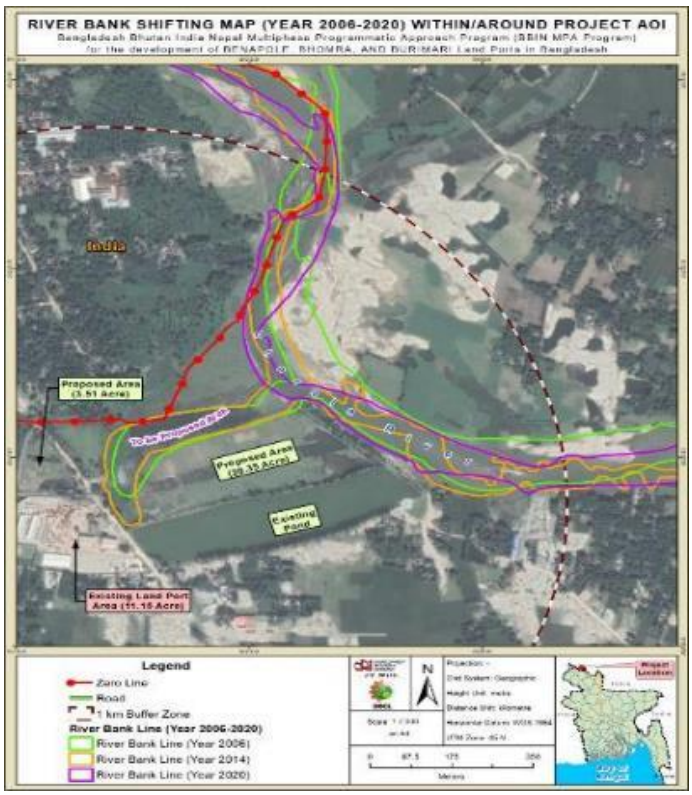


Figure 4.10: River bank shifting map within the project AOI

80. The following figure (4.10) shows the riverbank shifting within the project influence area from 2006-to 2020. The consultation with local people also revealed that the course of the Dharala river was changed year to year. Once the river occupied the large area, the embankment shifted the riverbank.

4.3.4 Geology & Soil

81. Rangpur division falls into four different soil formation zones. The general soil types of the Rangpur division predominantly include Non-calcareous Dark Grey & Grey Floodplain Soils, Non-calcareous Brown Floodplain soils, Deep Red Brown Terrace Soils

82. As the sub-project area Burimari lies Lalmonirhat district at Rangpur division, the mail soil classifications are Non-calcareous Dark Grey & Grey Floodplain Soils which occur extensively on the Old Brahmaputra and old Meghna estuarine floodplain. The majority of these soils are Eutric Gleysols.

83. Non-calcareous Brown Floodplain soils occur largely on the Old Himalayan Piedmont Plain, mainly on the ridges. They also occupy minor areas in the Tista, Karatoya-Bangali, Jamuna, Old Brahmaputra floodplains, and some western parts of the Ganges floodplain.

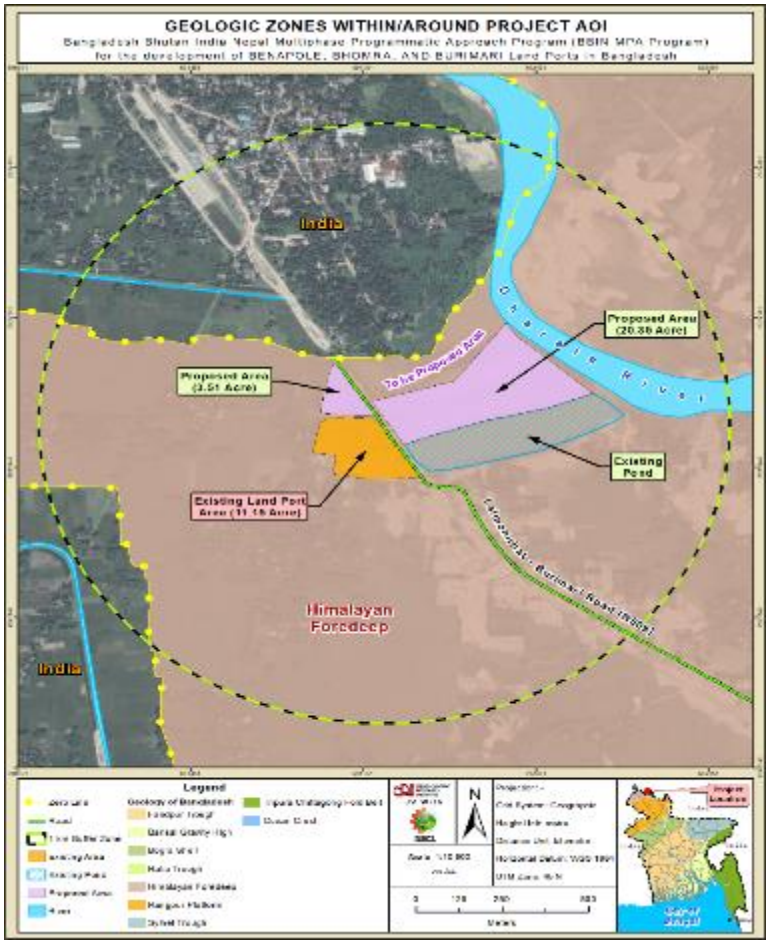


Figure 4.11 : Geological Zone within/around project AOI

4.3.5 Topography and Seismicity

84. About 80% of the Rangpur division comprises alluvial soil of the Tista basin and 20% barren land. The elevation is below 50 masl. Lalmonirhat is a land with mixed topography. The topographical condition of the Lalmonirhat is relatively plain, with areas higher in level along with the northern and western parts and lower in the eastern and western parts. The sub-project areas mainly comprise plain agricultural land and are almost flat. In the central position, the elevation stands range between 30 -75 m a.m.s.l. The elevation of Burimari is 62 meters.

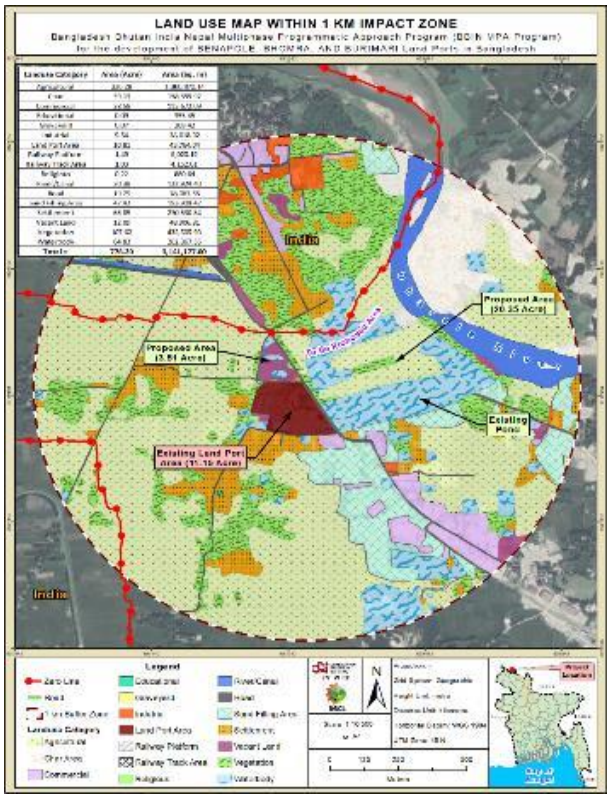


Figure 4.13: Land use map within/around project

85. Bangladesh is seismically active and has experienced numerous large earthquakes during the past 200 years at about every 30 years. Bangladesh is situated in one of the most tectonically active regions globally, where three major plates meet (the Indian Plate, the Tibet Sub-Plate, and the Burmese Sub-Plate). The sub-project area is located over the Indian Plate, moving north.

86. However, due to the location of relevant plates, fault lines, and hinge zones, Bangladesh itself is divided into three seismic zones based on the ranges of the seismic coefficient (note: the seismic coefficient is a measure of how strong an earthquake has the potential to be based on a combination of the mass of the plate and the seismic forces acting on it, as well as how frequently these quakes are likely to occur).

87. As per the seismic zone classifications (Figure 4.13), the sub-project areas within the Rangpur division fall in Zone II and Zone III, meaning medium seismic intensity. But the sub-project area, especially Burimari, falls into Zone III, in which the seismic coefficient is 0.20.

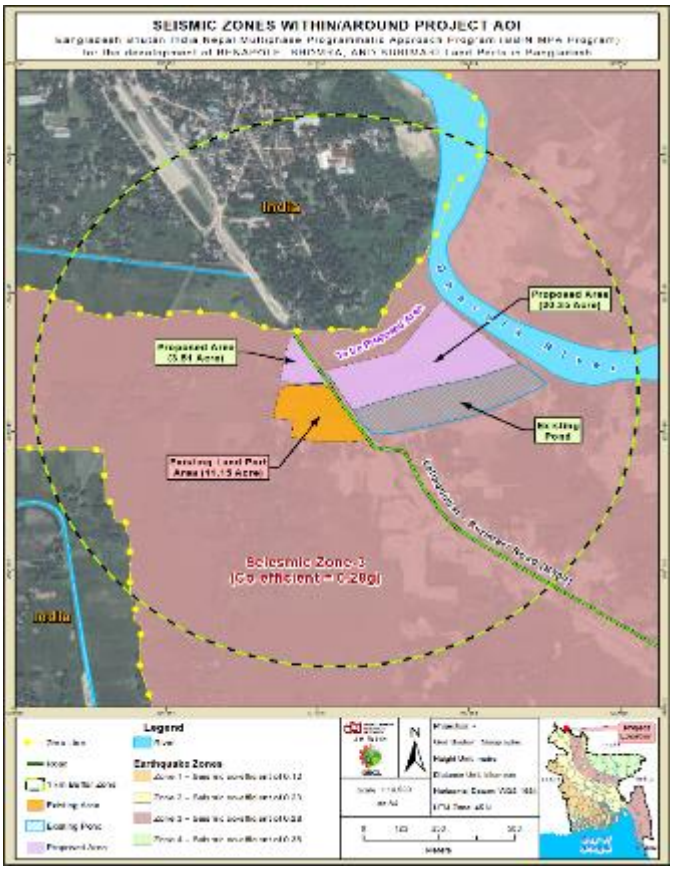


Figure 4.12: Seismic Zone within/around project AOI

4.3.6 Environmental Quality

88. The existing environmental quality in the project influence area serves as the basis for identifying, predicting, and evaluating the potential environmental impacts of the proposed project interventions. The baseline environmental quality has been assessed through field studies during December 2021 within

the impact zone and analysis of the information for various components of the environment, viz. air and noise, water, and soil.

4.3.6.1 Air Quality

89. Ambient air quality data at the sub-project site was measured to verify the current air quality. The aim was to collect the baseline air quality data and compare the data with the air quality data during project activities to check the air pollution level due to the construction activities and design adequate mitigation measures, as applicable.

90. The widespread use of stone crushers produces noise and air pollution in the Burimari land port region of Lalmonirhat, Patgram Upazilla. The main air pollutants in the project location are PM2.5 and PM10, SO2, NO2, Carbon Monoxide (CO), O3, Volatile Organic Carbon (VOC). Motor vehicles are the major source of PM pollution. Most of the PM pollutants (greater than 80%) come from diesel-run vehicles.

91. As this is the Port area, heavy vehicle movement, paved/unpaved road, loading and unloading yard of existing land port are the sources of air pollution. During the dry months of November–April, the dust concentration is higher. Dispersal of pollutants depends upon factors like prevailing wind direction and other weather conditions, atmospheric stability, the height of the source.

Stone Crushing activity causes dust pollution

92. The air quality monitoring was performed at selected locations (see Figure 3.7). All the locations of air quality sampling are shown in Figure 4.14. Results of the air quality monitoring are given in Table 4.2. Analysis of each measured parameter is given in the following paragraphs.

Figure 4.14: Air Quality Monitoring in the Project Site

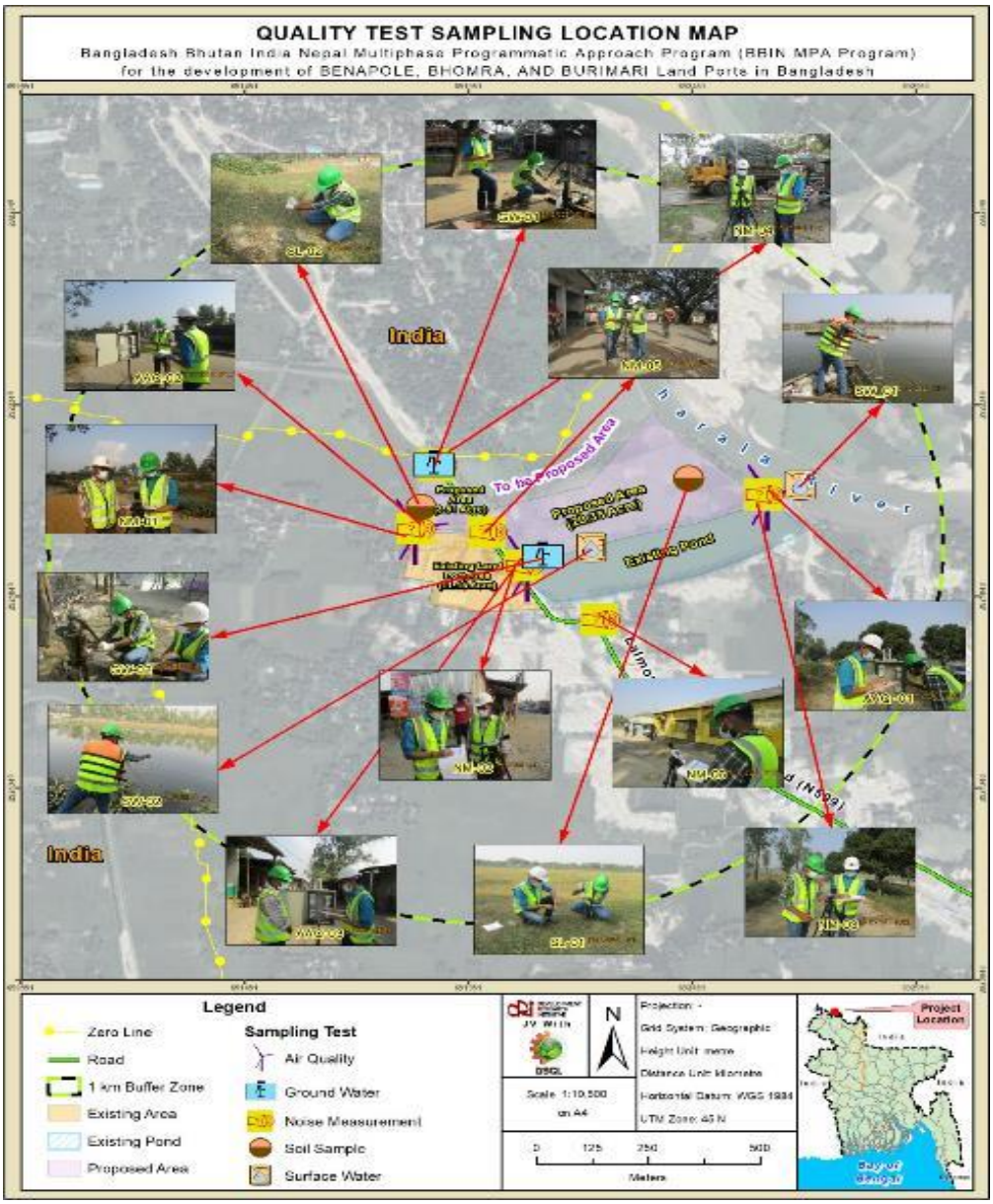


Figure 4.15: Environmental Quality Test Sample Location Map

Table 4-2: Ambient quality test at the project location

Parameter	Unit	AAQ_01 26.406051^{0}N 88.931064^{0}E Beside Dharala River	AAQ_02 26.405430^{0}N 88.9232181^{0}E North Side of BGB Camp	AAQ_03 26.404480^{0}N 88.925669^{0}E Zero Point Bazer Area	Bangladesh Standard	WHO Standard	Duration (hours)	Method of Analysis
$PM_{2.5}$	µg/m^3	53.49	61.34	73.21	65	25	24	AEROQUAL Series 500 Particulate matter monitors Gravimetric
PM_{10}	µg/m^3	88.65	97.54	141.03	150	50	24	
SO_2	µg/m^3	63.87	58.65	72.32	365	20	24	AEROQUAL Series 500 SOx monitor
NO_x	µg/m^3	47.77	45.54	56.98	100	40	Annual	AEROQUAL Series 500 NOx monitor
CO	ppm	1	1	3	9	10	8	CO Meter
O_3	µg/m^3	0.56	0.52	157	NYS	100	8	AEROQUAL Series 500 O3 monitor
VOC	ppm	32.67	38.43	57.35	NYS	NYS	8	AEROQUAL Series 500 VOC monitor
Weather Conditions		Sunny	Sunny	Sunny	-	-	-	-

*NYS – Not Yet Standardized

** The Bangladesh National Ambient Air Quality Standards have been taken from the Environment Conservation Rules, 1997, which was amended on 19 July 2005 vide S.R.O. No. 220-Law/2005

* CO & CO_2 concentrations and standards are 8 hours only

4.3.6.2 Noise Level Measurement

93. Excessive noise is a potential issue for both human and biological receivers. It can cause a range of negative issues, from mild annoyance and moderately elevated levels of aggression to significant disturbance of behavioral patterns and, in severe cases, temporary hearing loss. Noise Level Measurement was analyzed at six project-influenced locations from 07 December 2021 to 13 December 2021. The noise level monitored at the project locations has been Burimari in the Lalmonirhat district of the Rangpur division, shown in Table 4.14.

94. The site visit at Burimari Land Port shows that the baseline noise level is substantial because of busy traffic movement, and the stone crusher machine's regular loading and unloading activities result in high people movement. So, the result shows that the time-weighted average value of the sound monitored inside the project-influenced area exceeded the national standard set for the sampling locations for residential and commercial areas both at day and nighttime.

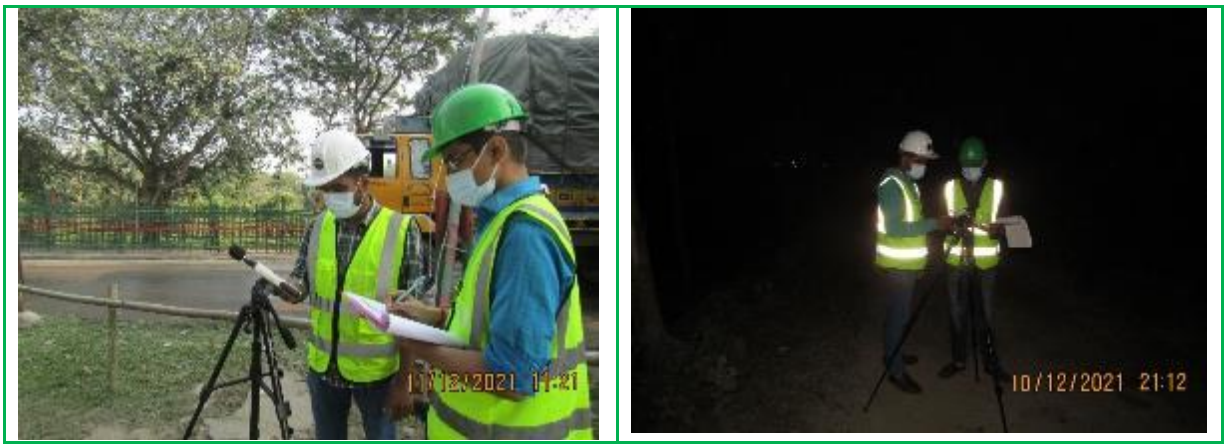


Figure 4.16: Noise Level Monitoring in the Project Site

Table 4-3: Noise level measurement at the project location

Sample ID	Sample Location	GPS Location	Land Use Category	Day Time		Noise Level (dBA) (LAeq)	Night Time		Noise Level (dBA) (LAeq)
				Start	End		Start	Start	
NM_01	North Side of BGB Camp	26.405437°N 88.923273°E	Residential	03:00 pm	04:00 pm	58.76	09:00 pm	10:00 pm	59.76
NM_02	Zero Point Bazer Area	26.404541°N 88.925656°E	Commercial	12:00 pm	01:00 pm	71.60	09:05 pm	10:05 pm	58.80
NM_03	Beside Darala River	26.406051°N 88.931064°E	Residential	10:00 am	11:00 am	50.56	09:03 pm	10:03 pm	45.20
NM_04	BGB Check post 02	26.406898°N 88.923831°E	Residential	11:00 am	12:00 pm	71.00	09:15 pm	10:15 pm	48.16
NM_05	BGB Check post 01	26.405292°N 88.924887°E	Commercial	10:00 am	11:00 am	77.30	09:27 pm	10:27 pm	61
NM_06	Near Burir Hotel	26.403220°N 88.927400°E	Mixed Area	03:00 pm	04:00 pm	71.7	09:00 pm	10:00 pm	67.20

Notes:
- *Land use category is based on the classification provided in the Noise Pollution Control Rules (2006)*
- *Shaded cell indicates noise levels over Noise Pollution Control Rules ambient noise limits for a given land-use area*
- *The sound level standards for the commercial area are 70 at day and 60 at night.*
- *The sound level standards for the residential area are 55 at day and 45 at night.*
- *Noise Level is the average noise recorded throughout the monitoring period*

4.3.6.3 Water Quality

4.3.6.3.1 Surface Water Quality

95. The main river in the sub-project area is Dharala which is very close to the proposed area. There is a Pond (Jol Mohol) beside the proposed area. Once it was part of the Dharala river, but after establishing the embankment, it was separated from the river. Surface water quality has been assessed from two (02) locations from the Dharala river and another from the existing pond. The test results show that the pH value for the existing pond (Jol Mohol) is 13.5. The water is fundamental because domestic wastes, sewage, stone crushing wastes are directly dumped into the pond.

96. Results of the surface water tested at the project locations have been shown in Table 4.4.

Figure 4.17: Surface water tested at the sub-project location

Table 4-4: Surface water quality test at the sub-project location

Parameters	Unit	SW_01 26.406289°N, 88.931902°E River Water Dharala River	SW_02 26.404870°N, 88.927190°E Pond Water Jholmohol / Adjactent to the Burimari Zero Point Bazer	Standards for Inland Surface Water** (Best fishing practice)	Analysis Method
pH*	-	9.7	13.5	6.5-8.5	Multimeter
Temperature	℃	23.7	24.7	20-30	Multimeter
Electricity Conductivity	µs/cm	335	420	NYS	Multimeter
Salinity		155	205		Multimeter
Disolved Oxygen (DO)	mg/l	9.3	7.7	5 or more	DO Meter
Total Dissolved Solids (TDS)*	mg/l	206	285	NYS	Multimeter
Oxidation-Reduction Potential (ORP)	mg/l	- 241	-330	NYS	Multimeter
Biological Oxygen Demand (BOD_5)	mg/l	6	8	0.2	5 days incubation APHA/SM 5210B
Chemical Oxygen Demand (COD)	mg/l	14	17	4.0	APHA/SM 5220D
Iron (Fe)	mg/l	<0.5	<0.5	NYS	AAS
Chloride (Cl^-)	mg/l	<10	<10	NYS	Titrimetric Method
PO_4^{2-}	mg/l	<0.1	<0.1	10	Photometric Method
SO_4^{2-}	mg/l	<10	19.2	400	Photometric Method
Total Suspended Solids (TSS)	mg/l	15	17	NYS	APHA/SM 2540D
Hardness	mg/l	48	63	10	SM2340C
Turbidity	NTU	<10	<10	10	Nephelometric
Oil & Grease	mg/l	<0.5	<0.5	10	

4.3.6.3.2 Groundwater Quality

97. Groundwater samples were collected from two (02) tube well within the project-influenced area. One from the east side of the proposed project beside the zero line, and another from the west side. From the survey, it was found that the depth of the water table is not so deep. Water extracted from 30-40 ft depth.

Figure 4.18: Groundwater tested at the sub-project location

Table 4-5: Groundwater test quality at the project location

Parameters	Unit	GW_01 26.406289°N, 88.931902°E Tube well Water Infront of BGB Check post 02 Established 2014 Depth: 45 Feet	GW_02 26.404870°N 88.927190°E Tube well Water Adjacent to Zero Point Bazer Area Established 2018 Depth: 35 Feet	Standards for Ground Water**	Analysis Method
pH*	-	6.73	8.65	6.5-8.5	Multimeter
Temperature	° Celsius	27.2	26.5	20-30	Multimeter
Electricity Conductivity		124	365	NYS	Multimeter
Salinity		52.1	174	NYS	Multimeter
Total Dissolved Solids (TDS)*	mg/l	73.5	230	1000	Multimeter
Oxidation-Reduction Potential (ORP)	mg/l	-0.9	-84.2	-	Multimeter
Arsenic	mg/l	<0.02	<0.02	0.05	AAS
Iron (Fe)	mg/l	<0.5	<0.5	0.3-1	AAS
Chloride (Cl^-)	mg/l	<10	<10	150-600	Titrimetric
PO_4^{2-}	mg/l	<0.1	<0.1	6.0	Photometric Method
NO_3^-	mg/l	<5	<5	5.0	APHA/SM 4500N-C
Manganese	mg/l	<0.5	<0.5	0.1	AAS
Total Coliform	mg/l	0	0	0	MFM
Fecal Coliform	mg/l	0	0	0	MFM
Color	mg/l	<5	<5	5	ISO 7887 Method B
Odor	mg/l	Odourless	Odourless	-	APHA/SM 2150

4.3.6.4 Soil Quality

98. Changes in soil fertility due to land use and management practices were observed in monitoring sites. In general, soils are deficient in organic matter and nitrogen. Changes in Phosphorus, Potassium, Calcium, Magnesium, Manganese, Sulfur, and Boron were erratic. Two (02) soil samples were collected from the proposed sub-project area and tested the physio-chemical properties of the soil. Figure 4.19 shows the collection of soil samples at the sub-project boundary. The following table shows the soil quality of the sub-project area -

Figure 4.19: Soil Samples collected at the sub-project location

Table 4-6: Soil quality test at the sub-project location

Parameter	BR_SL_01	BR_SL_02	Unit	Detection Limit
pH	5.6	6.5	-	-
Sulfate	97.4	158.1	mg/kg	10
Nitrate	<5	<5	mg/kg	5
Total Iron	24995	25045	mg/kg	10
Total Manganese	340	167	mg/kg	10
Total Lead	5	<5	mg/kg	5
Total ZInc	41	37	mg/kg	10
Total Potassium	7463	8047	mg/kg	10

4.3.6.5 Natural Hazard

4.3.6.5.1 Flood

99. Floods are an annual phenomenon in Bangladesh. Normally the most severe floods occur during July and August (DMB, 2010). Regular river floods (during monsoon season) affect 20% of the country, increasing up to 67% in extreme years like the 1998 flood. In 2020, With the monsoon setting in and onrush of hilly water upstream, Bangladesh faced severe floods that caused extensive damage to farmlands across the country.

100. Heavy precipitation and onrush of water from hilly areas upstream inundated districts in the northern and eastern regions of the country, Low lying and char areas and crop fields in Lalmonirhat went underwater, and thousands of people were left marooned. Water levels in some major rivers, including the Tista and the Dharala, have risen due to heavy rainfall. Under these circumstances, people endured hardship with the fear of COVID-19 infection.

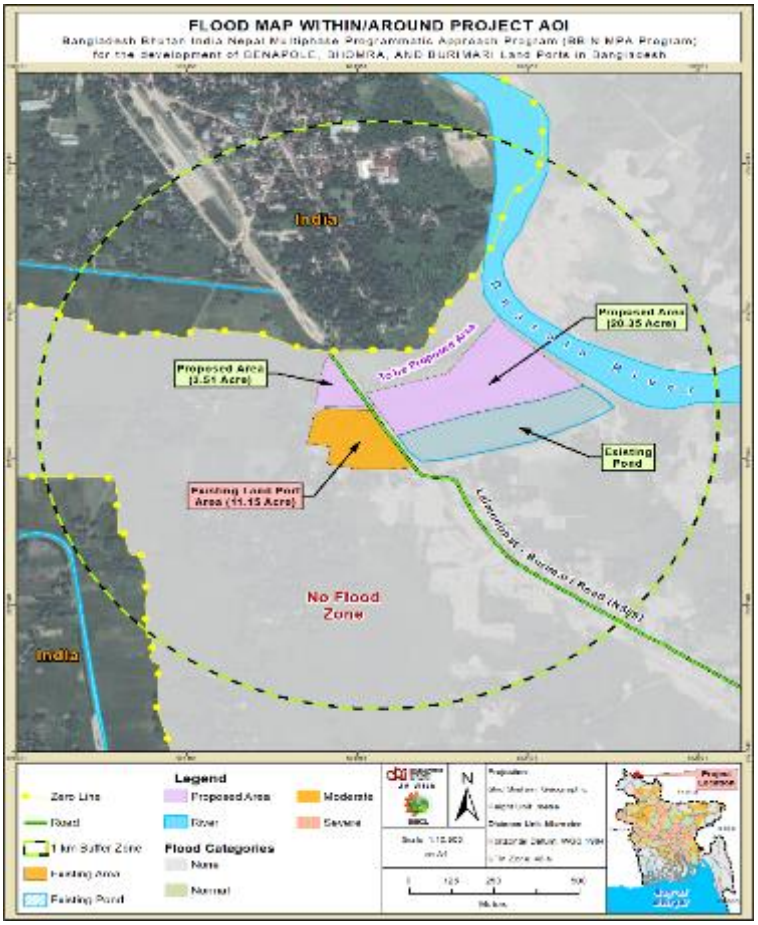


Figure 4.20: Flood Map within/ around project AOI

4.3.6.5.2 Cyclones and Storm Surges in the study area

101. With its repeated cycle of floods, cyclones, and storm surges, Bangladesh has proved to be one of the world's most disaster-prone areas. From 1797 to 1991, Bangladesh was hit by 60 severe cyclones (accompanied mainly by storm surges). Due to its unique geographic location, Bangladesh suffers from devastating tropical cyclones. The sub-project area lies in the northern part of the country. Thus, the area is in relatively more minor danger relatively from cyclones and storm surges.

4.3.7 Ecological Critical Area

102. The Government of Bangladesh, after considering the human habitat, ancient monument, archeological site, forest sanctuary, national park, game reserve, wild animals' habitat, wetland, mangrove, forest area, biodiversity, and other relevant factors of the area, can declare as ECAAs per the legal mandate the MoEFCC till now declared 12 areas as ECA. There is no critical ecological area in the Lalmonirhat district and the proposed project. The following figure clearly shows no ECA within the project influence area.

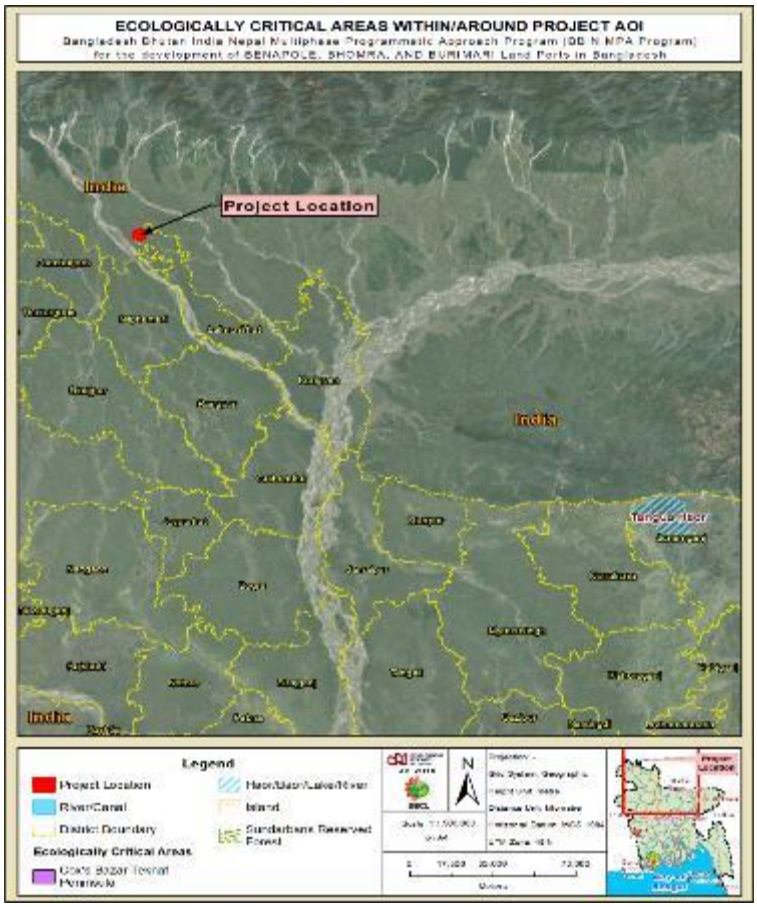


Figure 4.21: Ecological Critical Area/ around project AOI

4.4 Biological Environment

4.4.1 Bio-Ecological Zone

103. Bangladesh's ecosystems can be divided into two categories: (i) land-based ecosystems and (ii) aquatic ecosystems. Forest and hill ecosystems, agro-ecosystems, and homestead ecosystems are land-based, whereas seasonal and perennial wetlands, rivers, lakes, coastal mangroves, coastal mudflats, chars, and marine are examples of aquatic ecosystems. Each of the ecosystems has many sub-units with distinct characteristics as well. IUCN Bangladesh in 2002 classified the country into twenty-five bio-ecological zones. The sub-project areas within the Rangpur division fall into Barind Tract. Barind Tract is the largest Pleistocene physiographic unit of the Bengal basin, covering an area of about 7,770 sq km. The Barind Tract covers most Dinajpur, Rangpur, Pabna, Rajshahi, Bogra, Joypurhat, and Naogaon & Lalmonirhat districts. As the Burimari area is located in the Lalmonirhat district, the proposed project falls into the Barind tract, and the characteristics of this physiographic unit show the reflection in the Burimari area.

4.4.2 Biodiversity of Flora and Fauna

104. The main objectives of the flora and fauna survey are:

- Using various conventional approaches, assess the status of important floral and faunal components of all terrestrial habitats (forest, grassland, fallow land, riverine land, agroecosystem, and homestead plantation) present in the Project AoI (containing the sub-project site);
- Secondary data on the status of floral and faunal components and habitats are being collected and compiled from interested parties such as the Forest Service and others. Provide quantitative information on different floral and faunal components: using statistical analysis and deriving diversity indices;
- Identification and listing of floral and faunal species of conservation significant (rare, endangered and threatened – RET species and endemic species in accordance with International Union of Conservation for Nature - IUCN RED List/ MoEFCC) if any in the Project AoI;
- Assess the status of floral components (macro and microflora) of perennial aquatic habitats (lake, reservoirs/dams, and rivers) present in the Project AOI (Including the sub-project site) adopting standard techniques.

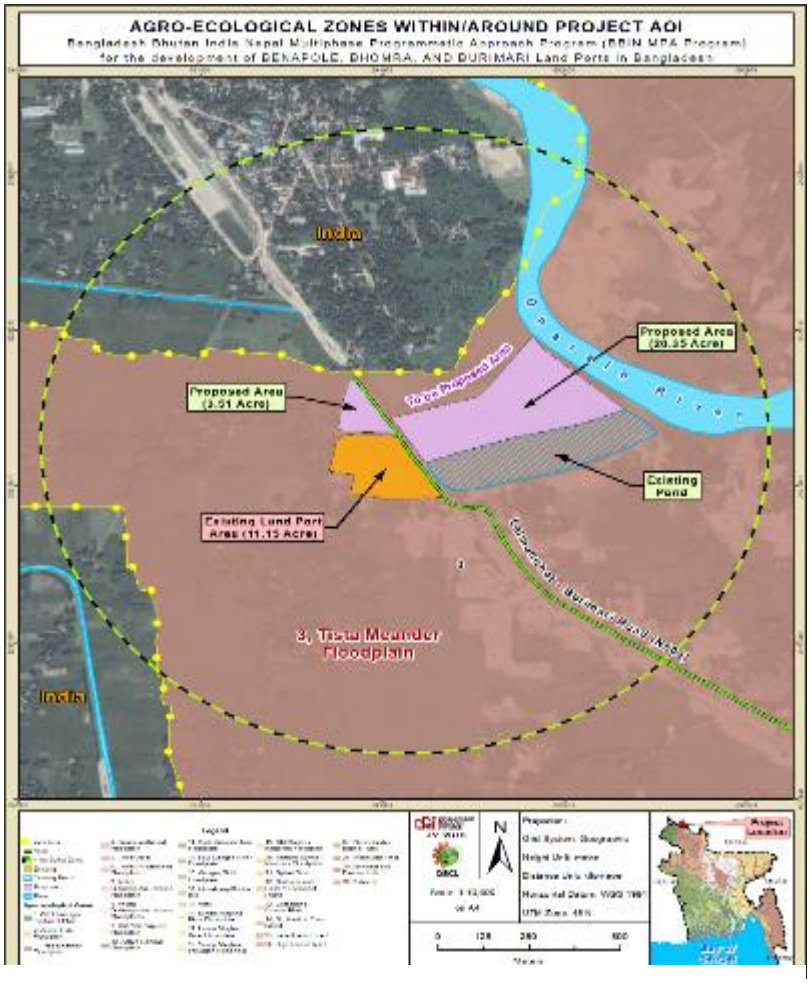


Figure 4.22: Agro-ecological zone within/ around project AOI

4.4.2.1.1 Flora

105. Since the sub-project region is wholly and intensively rural, much of the natural ecosystem remains intact. Herbs, shrubs, and trees are among the many types of vegetation. The sub-project is not likely to harm terrestrial flora because its activities have been substantially similar to those in the area over the last few decades. The ecological survey was conducted in two ways; i) Transect walk along the project intervention area ii) Quadrate method on a sample basis.

Quadrates

106. A total of 4 grids (size: 50 m × 50 m) were selected to study floral composition. A total of 2 days was spent in the field. The observation started early in the morning and ended in the late afternoon each day (0600 hr – 1800 hr.). For later identification, unidentified vegetation species were collected (seed, flower, or leaf). The micro-level approach mainly involved field-based primary data collection on different project objectives/scope of work components using well-established and accepted ecological methods in different habitats identified within the Project AOI. The field data collection mainly included biodiversity

status assessment of different life forms of floral elements such as trees, shrubs, climbers, herbs, and grass (Figure 4.21)

Figure 4.23: Vegetation Survey using Quadrates method

Transect Walk

107. Alongside Transect line and gridding methods, surveyors performed transect walking to identify floral species. These random transect walks were done in-between the quadrate exercises. See Figure 4.22 for photos.

Figure 4.24: Transect walk along Sub-project location

108. Quantitative Plant surveys were conducted in two habitats to enumerate the vegetation occurring within the Project AOI. These are discussed below. The proposed area mainly harbors naturalized shrubs, herbs, grasses, and weeds. The roadside plantation was common. The region is highly diversified in terms of vegetation. Since there is no single satisfactory book of red lists in Bangladesh, we used the categories identified by various papers with references for threatened species listing. Table 4.6 presents the detailed information of the quadrate survey conducted in the field. The quadrates include Homestead, roadside, riverine/aquatic vegetation, and agricultural vegetation. From the Survey analysis, Mahagony has been found as the most dominant tree species in the entire sub-project location.

Table 4-7: Detail quadrat information for floral survey

S/N	Location	Types of Habitats
1	East Side of Burimari Port Area, Burimari Zero Point Un: Sreerampur; UZP: Patgram; Dist: Lalmonirhat	Roadside, Homestead
2	West Side of Burimari Port Area, Burimari Zero Point Un: Sreerampur; UZP: Patgram; Dist: Lalmonirhat	Homestead, Social Forestry

Homestead Plantation

109. A list of plants found at homesteads of the sub-project area is given in Table 4.7 and Figure 4.25.

Table 4-8: Common plants found in the backyards of homesteads of the sub-project area

Bengali/ Local name	Scientific name	Family	Uses/importance
Aam	*Mangifera indica*	Anacardiaceae	**Fruits, timber, fuel, furniture**
Amra	*Spondias pinnata*	Anacardiaceae	**Fruits, fuel**
Amloki	*Phyllanthus Emblica*	Euphorbiaceae	**Fruits, timber, dye, medicine**
Ataphal	*Annona reticulata*	Annonaceae	**Fruits, timber**
Baroi/Kul	*Zizyphus mauritiana*	Rhamnaceae	**Fruit, agriculture tools, fuel**
Bel	*Aegle marmelos*	Rutaceae	**Fruits, herbal medicine**
Safeda	*Manilkara sapota*	Sapotaceae	**Fruits**
Jalpai	*Elaeocarpus robustus*	Elaeocarpaceae	**Fruits, oil**
Dalim	*Punica granatum*	Punicaceae	**Fruits, medicinal use**
Loqut	*Eriobotrya japonica*	Rosaceae	**Fruits, fuel**
Khejur	*Phoenix sylvestris*	Palmae	**Juice, fruits, fuel, fence, Basket**
Kamla	*Citrus reticulata*	Rutaceae	**Fruits**
Kamranga	*Averrhoa carambola*	Averrhoaceae	**Fruits, herbal medicine**
Kadbel	*Feronia limonia*	Rutaceae	**Fruits, herbal medicine**
Narikel	*Cocos nucifera*	Palmae	**Fruits, drinks, fuel, fence, handicrafts**
Peyara	*Psidium guajava*	Myrtaceae	**Fruits, jelly, fuel, tools**
Supari	*Areca catechu*	Palmae	**Fruits, fuel, pole, window rod**
Sarifa	*Annona squamosa*	Annonaceae	**Fruits**
Tetul	***Tamarindus indica***	**Leguminosae**	**Fruits, medicine, timber, fuel**

Source: Environmental Survey Team 2021

Figure 4.25: Commonly found homestead plants in the sub-project area (Source: Survey Team 2021)

Roadside Plantation

110. Terminalia arjuna (Arjun), Lannea coromandelica (Jiol), Delonix regia (Krishsachura), Tectona Grandis (Segun) etc., were found as the most common roadside plantation (Figure 2.24). A list of homestead and roadside plats is presented in Table 4.8.

Figure 4.26: commonly found roadside plants in the sub-project area (Source: Survey Team 2021)

Table 4-9: List of Roadside and Homestead plantation found in the sub-project area

Scientific Name	Local Name	English	Types	Use	Indigenous	IUCN Red Book Status	Indigenous / Exotic
Ziziphus izyphus	Boroi	Jujube / Chinese date	Fruit-bearing tree	Food	Indigenous	LC	Endemic
Eucalyptus globulus	Eucalyptus	Bluegum	Timber	Timber	Exotic	LC	Non-endemic
Albizia lebbeck	Koroi	Lebbeck	Timber	Timber	Indigenous	LC	Endemic
Lannea coromandelica	Ziga	Indian Ash Tree	Medicinal	Medicinal	Exotic	LC	Endemic
Azadirachta indica	Neem	Neem	Medicinal	Medicinal	Indigenous	LC	Endemic
Lagenaria siceraria	Lau	Bottle gourd	Vegetables	Vegetables	Indigenous	LC	Endemic
Lablab Purpureas	Shim	Bean	Vegetables	Vegetables	Indigenous	LC	Endemic
Musa acuminata	Kola	Banana	Fruit-bearing tree	Food	Indigenous	LC	Endemic
Amaranthus oleraceus	Lal Shak	Red amaramth	Vegetables	Vegetables	Indigenous		Endemic
Nicotiana tabacum	Tamak	Tobacco	Medicinal	Medicinal	Indigenous		Non-Endemic
Citrus X Sinensis	Malta	Orange	Fruit-bearing tree	Food	Exotic	LC	Non-Endemic

Scientific Name	Local Name	English	Types	Use	Indigenous	IUCN Red Book Status	Indigenous / Exotic
Artocarpus heterophyllus	Kanthal	Jackfruit	Fruit-bearing tree	Food	Indigenous		Endemic
Moringa oleifera	Shojona	Drumstick tree			Indigenous	LC	Endemic
Polyalthia longifolia	Devdharu	Monoon longifolium			Indigenous	LC	Non-Endemic
Mangifera indica	Aaam	Mango	Fruit-bearing tree	Food	Indigenous	LC	Endemic
Swietenia macrophylla	Mahagoni	Spanish Mahagoni	woody tree	Timber	Exotic	VU	Endemic
Ficus benghalensis	Bhot Ghac	Banyan			Indigenous	LC	
Delonix regia	Krishnachura	Royal poinciana	Flower and Timber	Timber	Indigenous	LC	Endemic
Leucas Aspera	Dhulpi	Thumbai	Flower	Flower		VU	Endemic
Neolamarckia cadamba	Kadam	Burflower-tree	Medicinal and Fuelwood	Medicinal and Fuelwood	Indigenous		Endemic
Clerondendron viscosum	Vat	Glory Tree					
Litchi chinensis	Lichu	Lychee	Fruit-bearing tree	Food		VU	Endemic
Terminalia arjuna	Arjun	Arjun tree	medicinal	Medicinal	Exotic	VU	Endemic
Annona squamosa	Ata	Custard	fruit-bearing tree	Food	Indigenous	LC	Endemic
Averrhoa bilimbi	Bilombo	Cucumber tree	fruit-bearing tree	Food	Exotic		Non-Endemic
Lannea coromandelica	Jiol	Indian ash tree	Woody Tree	Timber	Indigenous	LC	Endemic
Delonix regia	Krsnacura	Royal poinciana	Flower and Timber	Timber	Indigenous	LC	Endemic
Vachellia nilotica	Khoi Babla	Egyptian acacia	fruit-bearing tree	Food	Indigenous	LC	
Khaya anthotheca	Lombu	White mahogany	woody tree	Timber	Exotic	VU	Non-Endemic
Acacia mangium	Mengium	Wattle	Fuelwood	Fuelwood	Exotic	LC	Non-Endemic
cassia siamea	Minjiri	Cassia tree	Fuelwood	Fuelwood	Exotic	LC	
Samanea saman	Rain Tree	Rain Tree	Fuelwood	Fuelwood	Exotic	LC	Endemic
Tectona Grandis	Segun	Teak	Woody tree	Timber	Exotic		Endemic
Streblus asper	Shaora	Toothbrush tree	Shrub	papermaking	Exotic	LC	
Bombax ceiba	Shimul	cotton tree	Cotton Tree	Cotton	Exotic	LC	Endemic
Dalbergia sissoo	Sishoo	North Indian rosewood	Fuelwood	Fuelwood	Exotic	LC	Endemic

Source: Environmental Survey Team 2021

*** Abbreviation:** UC = Uncommon, VC = Very Common, C = Common, F = Few, O = Occasional, CR = Critically Endangered, EN = Endangered, Vu = Vulnerable, LC = Least Concern, DD = Data Deficient, M = Migratory, R = Resident, Bh = Bush, Op = Open place, Hh = Human habitation, Cl = Cultivated land, Tt = Tall tree, H = Hole, R = River, P = Pond, C = Canal, Dt = Ditch, We = Water edge.

111. Critical habitat describes the most significant and highest priority areas for biodiversity conservation. Critical habitat assessment analyzes the significant area for biodiversity and conservation.

112. Critical habitat criteria are as follows and should form the basis of any critical habitat assessment:

- **Criterion 1:** Critically Endangered (CR) and Endangered (EN) species at global and national level
- **Criterion 2:** Endemic and restricted-range species
- **Criterion 3:** Migratory and congregator species
- **Criterion 4**: Highly threatened and unique ecosystems
- **Criterion 5:** Key evolutionary processes

113. However, the critical habitat determination is not necessarily limited to these criteria. Other recognized high biodiversity values might also support a critical habitat designation, and the appropriateness of this decision would be evaluated on a case-by-case basis. Examples are as follows:

- **Criterion 6:** Legally Protected Areas in IUCN Categories I-II; and
- **Criterion 7:** Internationally Recognized Areas.

114. GN58-GN62 of IFCPS6 describes gradients of critical habitat. There are gradients of critical habitat or a continuum of degrees of biodiversity values associated with critical habitats based on the site's relative vulnerability (degree of threat) and irreplaceability (rarity or uniqueness).

Assessment of Critical Habitat

115. Biodiversity surveys consultation with stakeholders and Biodiversity Specialists were undertaken as part of the ESIA. The following potential critical habitat features are known or likely to be present in the area:

Critically Endangered (CR) and Endangered (EN) species at global and national level

116. Biodiversity study did not record species included as Critically Endangered (CR) or Endangered (EN) species in Project footprint or greater study area landscape. Therefore, Criterion 1 does not apply to the Project site.

Endemic and restricted-range species

117. Biodiversity study and literature review uncovered endemic and restricted-range species in project footprint or study area landscape. Therefore, Criterion 2 applies to the project site.

Migratory and congregatory species

118. Biodiversity study and literature review did not record species that include migratory and congregatory species or the habitat in Project footprint or greater study area landscape. The Sub-project is also not part of any global migration route. Therefore, Criterion 3 does not apply to the Project site.

Highly threatened and unique ecosystems

119. The study did not observe any unique ecosystems in the Sub-project area. Therefore, Criterion 4 does not apply to the Project site.

Legally Protected and Internationally Recognized Areas

120. The Sub-project location is not located within or adjacent to national-level protected areas, regional protected areas, or international protected areas. However, it is considered that the requirements in Paragraph 20 of the IFC PS6 (IFC, 2012a) do not apply to the Project.

Agricultural Land

121. Most of the land in the project belongs to agricultural land, in general. A variety of naturalized weeds also grow along with the crops. Agricultural lands are dominated by herbs like Lippa alba, Xanthium Indicum, Alternanthera sessile, Grange sp., Dentalla repens, Eclipta alba, Lens esculenta, etc. Sedges like *Cyperus rotundus* are commonly occurring in agricultural lands. Grasses like Cynodon dactylon and Paspalum conjugatum can be found naturally. Major crops of the region are paddy, betel leaf, betel nut, potato, corn, tamak, turmeric, tea, peanut, mustard, patol (heap), brinjal, ginger, cucumber, and other vegetables.

Figure 4.27: Commonly found agricultural plants in the sub-project area (Source: Survey Team 2021)

4.4.2.1.2 Fauna

122. Faunal studies were undertaken in the Project AOI by opportunistic search methods where habitats of the different faunal species were repeatedly visited twice to confirm their presence and usage. The focus was on the larger animals under threat of frequent urbanization and industrialization in the area. The target faunal species studied are Mammals, Avifauna, Reptiles, and Amphibians. Cows, goats, dogs, cats, mules are found in the study area during the visit. No wild fauna was found in the study area. As per discussion with local people, it was learned that fox is found in bushy areas, but none were spotted during the visit. In the forested or bushy area, wild animals like Fox, Wild Cats, Otter/Udbiral (*Lontra Canadensis*), Kat Biral, Rabbits et were found.

123. Avifauna like Gugu/Dove (Streptopelia Chinensis), Paira/Pigeon, Doyal (*Magpie Ribbon*), House sparrow/Choroi, Parrot/Tiya, Crow (*Corvus splendens*), Myna/Shalik, Babui/Baya Weaver (*Ploceus philippinus*), Dhooli Bawk, Sarosh/Eastern Great Egret (*Ardea modesta*), Kaali Bawk, Machranga/Kingfisher (*Halcyon smyrensis*), Duck (*Anatidae anatinae*), Dhar Bawk/Egret, Konch Bawk/Pond Heron (Ardeola Arayii) are found in the study area. Apart from these, as per discussion with local people, a few migratory birds also visit the port site.

Figure 4.28: Commonly found fauna in the sub-project area (Source: Survey Team 2021)

Table 4-10: List of Fauna found in the sub-project AOI and their local IUCN status

Scientific Name	Local Name	IUCN Redbook Status*	Habitat*
Suncus murinus	Chika	LC	H
Pteropus giganteus	Baro Badur	LC	Tt
Cynopterus sphinx	Kola Badur	LC	Hh
Scotophilus kuhlii Leach	Choto Holdey Chamchika	LC	Tt
Canis aureus Linnaeus	Pati Shial	LC	Op
Vulpes bengalensis	Kheki	VU	Hh, Op
Prionailurus bengalensis	Chita Biral	NT	Bh
Herpestes edwardsi	Boro Beji	LC	Bh
Herpestes urva	Moucha Bejji	NT	Bh
Viverra zibetha Linnaeus	Gondho golkul	LC	Bh
Manis crassicaudata Gray	Indian Pangolin	EN	Bh
Callosciurus pygerythrus	Badami Kathbirali	LC	H
Bandicota bengalensis	Metho-indur	LC	H
Rattus	Indur	LC	H

*** Abbreviation:** UC = Uncommon, VC = Very Common, C = Common, F = Few, O = Occasional, CR = Critically Endangered, EN = Endangered, Vu = Vulnerable, LC = Least Concern, DD = Data Deficient, M = Migratory, R = Resident, Bh = Bush, Op = Open place, Hh = Human habitation, Cl = Cultivated land, Tt = Tall tree, H = Hole, R = River, P = Pond, C = Canal, Dt = Ditch, We = Water edge.

4.4.2.1.3 Fish Survey

124. The survey was conducted for 02 consecutive days in the Dharala river and adjacent fish market. The two days were spent on reconnaissance surveys and primary survey purposes. During surveys, fishers' interviews were also conducted to understand their perceptions and thoughts of fishing techniques, fish availability, and the correlation of fish caught with the environment. Interviews also

covered environmental considerations, e.g., environmental changes over the last 30 years and their correlation with a fish catch or migratory route. Different fish species were observed and interviewed with fishers during the field survey during the fish market visit. Some figures are shown in figure 4.27. A complete list of fisheries found in the sub-project area is listed in **Table 4.10**.

Figure 4.29: Fishing practice near Burimari Land Port Area; Un: Burimari; Up: Patgram; Dist: Lalmonirhat

Table 4-11: List of fisheries species found in the project AOI and their local IUCN status

Family	Scientific Name	English Name	Local Name	IUCN Red Book Status*
Ambassidae	*Parambassis ranga*	Indian glassy fish	Chanda	**LC**
Amblycipitidae	*Amblyceps mangois*	Indian Torrent catfish	Shing	**LC**
Anguillidae	*Anguilla bengalensis*	Indian longfin eel	Baen	**VU**
Anabantidae	*Anabas testudineus*	Climbing perch	Koi	**LC**
Balitoridae	*Lepidocephalichthys annandalei*	Annandale loach	Gutum	**DD**
Bagridae	*Mystus tengara*	Indian catfish	Tengra	**LC**
	Sperata aor	long-whiskered catfish	Aair	**VU**
Channidae	*Channa marulius*	Great snakehead	Gojar	**EN**
	Channa striata	Snakehead murrel	Shol	**LC**
	Channa punctata	Spotted snakehead	Taki	**LC**
Cyprinidae	*Labeo bata*	bata Labeo	Bata	**LC**
	Ctenopharyngodon idella	Grass carp	Grass carp	**VU**
	Labeo calbasu	Orange-fin labeo	kali Baush	**DD**
	Labeo catla	Indian carp	Katla	**LC**
	Cyprinus carpio	Common carp	Minar Carp	**DD**
	Puntius chola	Swamp barb	Puti	**LC**
	Labeo rohita	Ruhi	Rui	**LC**
	Puntius Sarana	**Olive barb**	**Sorputi**	**LC**

*** Abbreviation:** UC = Uncommon, VC = Very Common, C = Common, F = Few, O = Occasional, CR = Critically Endangered, EN = Endangered, Vu = Vulnerable, LC = Least Concern, DD = Data Deficient, M = Migratory, R = Resident, Bh = Bush, Op = Open place, Hh = Human habitation, Cl = Cultivated land, Tt = Tall tree, H = Hole, R = River, P = Pond, C = Canal, Dt = Ditch, We = Water edge.

Carp Fish

Taki

Environmental Survey Team 2021

Figure 4.30: Different types of fishes observed in the project AOI

4.4.3 Farming Practice

125. Land type, growing season length, and other environmental and socioeconomic factors influence farming operations. There are three cropping seasons in the study region each year. The seasons are Kharif-I, Kharif-II, and Rabi. The Kharif-I period runs from March to June. The unpredictable weather with alternating dry and wet spells characterizes this season. In this season, vegetables, jute, and mustard crops are grown. The second Kharif begins in July and concludes in October. The Kharif-II season is marked by a wet and overcast climate, significant rainfall with uneven distribution, poor sun radiation, and high temperatures and humidity. According to the local farmers, the main crops are Paddy, corn, potato, groundnut, mustard seed, tomato, onion, chili, and other vegetables. The main fruits are Mango. Jackfruit, Betel nut, litchi, banana, and papaya.

4.4.4 Protected Areas and Endangered Species & Red Book Species

126. The proposed areas are barren land with some standing crops, few trees, and mainly shrubs and grasses. There are no archaeological sites, sensitive cultural or biodiversity receptors of international, national, state, or district importance, including protected areas, key biodiversity areas, forest areas, sacred groves, or historical/cultural monuments around the identified proposed sites or along the alignments. The names of locally threatened species were found from interviews with local people. The base of this analysis was to identify the species disappearing fast in the last 20 years. A few endangered floral & faunal species are reported as IUCN red data book.

4.5 Socio-Economic Environment

4.5.1 Introduction

127. The socio-economic condition of the people living in the study is described in this chapter. The primary data were collected using a range of RRA techniques, including Key Informant Interview (KII), Focus Group Discussion (FGD), observation, and public consultation. Moreover, relevant secondary information was compiled from the community series of the Population Census 2011 published by the Bangladesh Bureau of Statistics (BBS). A separate census survey was conducted for the 50 project affected households related to the RAP preparation. Four of the 50 PAPs are co-sharers with other extended family members. It may happen that they do not get compensation as other co-sharer may grab their share. Some of the PAPs are from weaker sections of the community, such as women, less educated ones, and those unable to access the DC office to get legal documents. They will need special support and mediation by BLPA to access the DC office to obtain documents and get compensation, etc. The local language of the sub-project area is Bangla/Bengali. Bangla is spoken by all the people living in the project surrounding area, and it is the preferred language of communication.

4.5.2 Area and Population

128. The Burimari Union and Patgram Upazilla were 24719 and 218615, respectively, and household size for the Upazilla. The Sex Ratio of males/females was very close to 1.0 (1.02 in the district, 1.061 in Union, and 1.025 in Upazilla).

Table 4-12:Area and Population of the Study Area

Reference Area	Area acre	HH	Population	Female Population	Male population	Sex Ratio
Burimari Union	6376	5322	24719	11991	12728	1.061
Patgram Union	9007	6202	28266	13889	14377	1.035
Patgram UP	60999	47893	218615	107903	110712	1.026
Patgram UP rural		41514	188050	92829	95221	1.025
Patgram UP Urban		6379	30565	15074	15491	1.027
Lalmonirhat	308232	290444	1256099	627300	628799	1.002
Bangladesh (area, pop)		32.1 million	150 million	74.98 million	74.79 million	100.3

Source: BBS 2011

4.5.3 Housing Characteristics

4.5.3.1 Household - Gender

129. A Social Survey was carried out in the project intervention areas to create a profile of the socio-economic features of the communities. The survey team interviewed 50 households (HHs) across the sub-project area. The respondents from each household were selected based on whether they were the HH head, an elderly member of the family, or a member of the family who is knowledgeable about the HH's details. The Gender Ratio of males/females was close to 1.214.

Table 4-13: Household Gender

Districts	HH	Individuals residing in the HH	Male	Female
Burimari	50	237	130	107

Source: Social Survey Team 2021

4.5.3.2 Household Size

130. The 50 sample households have 237, consisting of 130 males and 107 females. Household members with an average household size of 3 mean that the sample households in Burimari had larger household sizes than the national average of 4.4 and 145 PAP households 4.29.

Table 4-14: Household Size

Family Size (Number of Members)	Aggregate	Burimari
N		237
Up to 3	145	145
4 to 6	78	78
>6	14	14

Source: Social Survey Team 2021

4.5.3.3 Distribution of Age

131. Of the 50 sample households, 21.5% are males above age 45, 21.4% are females above 45%. The average age of each HH is approximately 28.86 years, with the maximum age being 80 years for males and 70 for females. The following tables depict the distribution of family size and age.

	Mean [1]	0-45	46-60	>60 (Vulnerable category)	Min	Max
N	**237**					
Burimari	28.86	186	32	19	1	80

Male	28.72	102	15	13	1	80
Female	29.05	84	17	6	1	70

Table 4-15: Distribution of Age

4.5.4 Land Ownership

132. A Social Survey was carried out in the project intervention areas to provide information regarding land ownership. The survey team got 91 responses across the sub-project area. The result indicates that the highest amount of land is owned through inheritance.

Table 4-16: Land Ownership

Ownership of land	Number response	Percentage of cases
N	**91**	
Inheritance	62	68.13
Purchase	24	26.37
As a gift	1	1.10
Others (Specify)	4	4.40

Source: Social Survey Team 2021

4.5.5 Land and Dwelling

133. The survey questionnaire required individuals to provide land ownership, type, and use information. 88 individuals claim to own lands. The following table describes the type of lands individuals in the surveyed HH. The table indicates that 49.45 percent of the HH owns land and house. The table also shows that 23.08 percent of individuals report having their land and cultivating it. Only 6 HH has leased/mortgaged or rented their land. 2.20 percent of the 50-households report mortgaging land, followed by 2.20 percent of HHs involved in subleasing land. The average land subleased/leased/mortgaged/rented is 6.60. The positive skew of this distribution is a result of large positive values.

Table 4-17: Land and Dwelling

Particulars of Land and Dwelling	Number	Percentage of response
N		**91**
Own land, house	45	49.45
Own land and own cultivation	21	23.08
Own land, pond	6	6.59
Own land, shop/business	4	4.40
Own land, fallow	3	3.30
Others (Specify) Lease	2	2.20
Own land, jungle	2	2.20
Own land, mortgaged	2	2.20
Own land, on charity (mosque/school)	2	2.20
Others (Garden)	1	1.10
Others (Specify) Lease	1	1.10
Others (Specify)(Bangladesh railway land and own infrastructure)	1	1.10
Own land, on lease/rent	1	1.10

Source: Social Survey Team 2021

4.5.6 Most Benefited & Affected by Project

134. The survey questionnaire required individuals to provide information regarding the people who will be most benefited and affected through the implementation of the project. According to most people, the whole community will benefit from the project. Landowners and people owning land close to the road will be most adversely affected by the implementation of the project.

Table 4-18: Benefited by Project

Who do you think would most benefit from the project in the community?	Percentage
N	**50**
Elderly person	2.00
Female	2.00
Whole community	88.00
Transport business/ entrepreneur	8.00

Source: Social Survey Team 2021

Table 4-19: Affected by Project

Who do you think would be most affected by the project in the community?	Percentage
N	**50**
Elderly person	3
Whole community	12
Transport business/ entrepreneur	1
Who has land close to the road	17
Land owner	17

4.5.7 Assets

135. Through the survey questionnaire, individuals provided information regarding the assets they own. The table shows the materials owned by the people.

Table 4-20: Affected by Project

Assets	Percentage
N	**1887**
Bed	1.85
Chair	2.86
Chair, Table	0.42
Clothing rack/ Almira/ cabinet/ showcase	11.87
CNG/ auto rickshaw/ korimon/easy bike	0.05
Cow/buffalo	3.55
Cycle	1.48
Dining Table	0.11
Dressing table	0.05
Electric fan	9.11
Fridge	1.27
Goat/ sheep	4.35
Jewelry (gold/silver) Bring in ANA	37.68
Mobile phone	6.47
Motor cycle	0.74
Pigeon /Duck/chicken	15.16
Rake	0.05
Rickshaw/ van	0.21
Sewing machine	0.21
Sofa	0.05
Table	0.64
Table, dining, reading and dressing	0.16
Television	1.64

Source: Social Survey Team 2021

4.5.8 Health Service

136. People mainly depend on Upazilla and Union Health Complex in the sub-project area. Some private health clinics with limited facilities are available in the area. Typical health services are available

in the hospital. No significant and critical treatments are available there. The local people urged the plant authority to support or build a hospital with modern health facilities.

Table 4-21: Health Service

Name of the health service provider	Availability			Total
	Yes	No	Don't know	
N	**246**	**168**	**44**	**458**
Community health clinic	2.44	21.43	18.18	10.92
District hospital	19.11	0.00	6.82	10.92
Maternity clinic	2.85	22.02	13.64	10.92
NGO run health center	2.44	17.86	31.82	10.92
Others (Rangpur Medical College)	0.41	0.00	0.00	0.22
Others (specify)	0.00	4.17	0.00	1.53
Private Clinic	7.72	15.48	11.36	10.92
Quack	19.11	1.79	0.00	10.92
Qualified Private physician	10.57	10.12	15.91	10.92
Union health complex	15.04	7.14	2.27	10.92
Upazilla health Complex	20.33	0	0	10.92

Source: Social Survey Team 2021

4.5.9 Profession

137. The following categories account for 95 percent of professions reported in the survey HH. The primary profession is shop/hotel owners having the highest percentage of 20%. Followed by agriculturists (18.95%) and laborers (16.84%). The lowest percentage (1.05%) is farmers, teachers, and home businesses.

Table 4-22: Profession

Profession	Percentage
N	**95**
Agriculturist	18.95
Farmer at others cultivation	1.05
Labor (construction, road repair)	16.84
Employee at shop/hotel	3.16
Household helping hand	3.16
Rickshaw puller/truck/bus driver	5.26
Home business	1.05
Owner of shop/hotel	20.00
Business, wholesale/industry	4.21
Teacher/home tutor	1.05
NGO (non-government/NGO employee)	4.21
Government employee;	4.21
Leasing/renting out land	1.05
Renting out property other than land (shop/tractor);	1.05
Retail seller (fish/vegetable/clothing/wood etc.)	1.05
other small businesses)	7.37
housewife	1.05
unemployed/ retired/ disable/child	1.05
Other (Specify)	4.21

Source: Social Survey Team 2021

4.5.10 Literacy

138. Literacy Rate above age 7 of the Reference Area is provided below. The literacy rate of sample respondents was 44.6 in Burimari union 46.1 in Patgram Upazilla and Lalmonirhat. The literacy rate is increasing with time due to positive change after 2011 as the literacy rate of Burimari was close to that of the national average (51-52%). The male community has more literacy rate than the female community in all the sample respondents.

Table 4-23: Literacy Rate (%) of the Reference Area Population (Age 7+)

Reference Area	Literacy Rate		
	Both Sex	Male	Female
Burimari Union	44.6	47.9	41.2
Patgram Union	48.1	50.0	46.2
Patgram Upazilla	46.1	48.4	43.8
Patgram UP rural	45.5	47.8	43.2
Patgram UP Urban	49.7	51.7	47.8
Lalmonirhat	46.1	49.3	42.9
Bangladesh	51.8	54.1	49.4

4.5.11 Environmental and Social Sensitive Locations

139. Around the project route, environmentally and socially vulnerable areas have been identified. It is a critical method for assessing impacts. The surveyor walked around the project-affected region and obtained GPS of these vulnerable structures. Here are some of the photos that the surveyors found. Figure 4.31 shows the details of environmental & social sensitive areas within the proposed sub-project area. Figure 4.31 shows the important environmental & social features within the project AOI.

Figure 4.31: Environmental Sensitive Locations within the project AOI

Table 4-24: Environmental & Social Sensitive area within the sub-project area

Name	GPS Location	Description	Photo
Family Graveyard	26.406026 °N 88.922453 °E	-	

Name	GPS Location	Description	Photo
Zero Point BOP Eidghah Mat	26.405415 °N 88.922067 °E	This is the largest Eidgah field in Burimari.	
Boromotol Jame Mosque	26.405251 °N 88.918393 °E	-	
Burimari BGB Camp	26.404719 °N 88.923011 °E	-	-
Burimari Land Port Mosque	26.404027 °N 88.923225 °E	-	
Burimari Land Port Mosque Graveyard	26.403987 °N 88.922848 °E	-	

Name	GPS Location	Description	Photo
Zero Point Rowsonia Darul Olum Mohiusshullah Kinder Garden Hafizia Mosque and Koimi Maddharasha	26.401386 °N 88.921799 °E	-	
Family Graveyard	26.403556 °N 88.923035 °E	-	
Burimari Land Port	26.404634 °N 88.925189 °E	Burimari land port, 3rd largest land port of Bangladesh, was established at Burimari zero point in 1988 for import and export goods with India, Bhutan, and Nepal by roadway.	
BGB Check Post no 1	26.405368 °N 88.924914 °E	-	
BGB Check Post no 2	26.406937 °N 88.923666 °E	-	
Badher Par Jame Mosque	26.404589 °N 88.931515 °E	Under construction Mosque	

Name	GPS Location	Description	Photo
Family Graveyard	26.404628 °N 88.931110 °E	-	

4.5.12 Traffic

140. Traffic study involved the exercise of data gathering and analysis concerning the movement of goods, passengers, and vehicles through the land port.

Movement of Trucks through Burimari

141. Transportation of cargo through Burimari is conducted by trucks (almost 99 percent). Bangladeshi trucks in the port are higher than the number of Indian trucks. On average, 71,953 Bangladeshi trucks and 70894 Indian trucks cross the port. The following figure illustrates the facts:

Table 4-25: Number of Trucks crossing the land port

Year	Number of Trucks Bangladesh	Number of Trucks India	Number of outgoing passengers at Burimari Port
2013-2014	22033	22295	3741
2014-2015	33938	33431	4250
2015-2016	54677	54181	2860
2016-2017	74624	73890	355
2017-2018	104842	101751	-
2018-2019	106729	105896	70708
2019-2020	82366	81281	88403
2020-2021	96417	94429	1322

Source: Burimari Land Port Authority

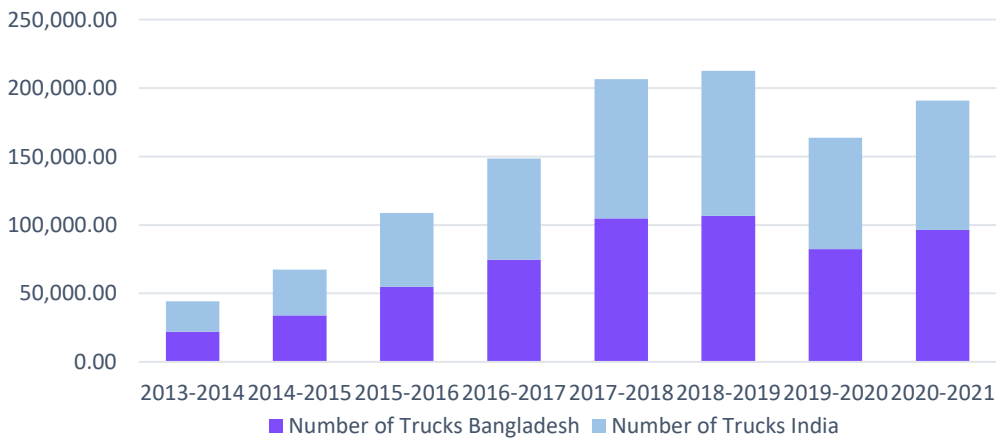


Figure 4.32: Number of Trucks Unloading and Loading at Burimari Land port

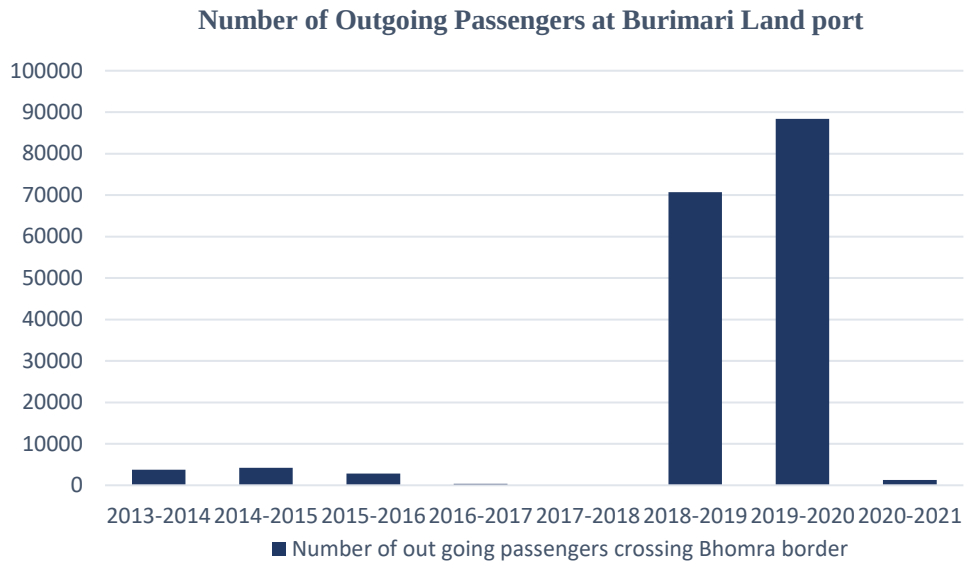


Figure 4.33: Number of Trucks outgoing Burimari Land port

142. In 2013-14 passengers from Bangladesh to India were around 3741. In 2018-19 the number increased to 70708. In 2017-18 and 2018-19, the highest number of trucks was in Bangladesh and India. The number of trucks has decreased over recent years. In 2018-19 and 2019-20, the highest number of outgoing Passengers at the land port was estimated. Major goods imported and exported through land ports are given in the following list:

Import Item:

143. Coal, Wood, Timber, Stone, Cement, China clay, Ball clay, Quartz, Chemical fertilizer, Cosmetic content, Animal food, a variety of kinds of fruits, onion, garlic, ginger, rice, pulse, wheat, verity kinds of seeds, etc.

Export Item:

144. Hilsha fish, Melamine, and some other goods.

Chapter 5. Stakeholder Engagement and Public Consultations

5.1 Introduction

145. Stakeholder consultation is an important element of the Environmental and Social Impact Assessment (ESIA) process. Soliciting, collating, and documenting the opinions of potentially affected people and interested parties ensures that project design and the ESIA reflect the stakeholder base's collective views. Consultation meetings were held at Burimari during the project preparation. New Focus Group Discussions (FGDs) regarding environmental and social concerns of the proposed project were carried out from 10th to 11th December 2021 to update the data relevant to environmental impacts owing to proposed project works.

5.2 Objective of the Consultation

146. People's participation in planning and implementation phases is crucial to take necessary actions to identify and mitigate any adverse environmental and social impacts and enhance the development outcomes of projects. Stakeholder of projects have the right to know what will happen in their immediate surroundings. They must be informed about the advantages and disadvantages of the program for obtaining their perceptions, views, and feedback on the possible changes likely to happen within the project intervention area. Therefore, a series of public consultations and FGDs were carried out according to the World Bank's guidelines. The major goals of the public consultations were to-

- Have stakeholders engage in gathering information and obtaining their views/opinions on the project;
- Begin establishing communication and evolving mechanisms for the resolution of social and environmental problems at local and project level;
- Identify potential environmental and social concerns such as displacement, safety hazards, employment, and vulnerable persons;
- Involve project stakeholders in an inclusive manner and
- Receive feedback from stakeholders on mitigation and enhancement measures to address the environmental and social impacts of the project.

147. The World Bank's Environmental and Social Framework (ESF) underscores the importance of open and transparent engagement between the borrower and project stakeholders as an important pillar of good practice. Effective stakeholder engagement through a robust consultation and disclosure mechanism promotes environmental and social sustainability of the project, enhances its acceptance, makes significant contributions to design, and aids in smooth implementation of the project. Stakeholder engagement is an inclusive process carried out throughout the project's life cycle. ESS10 refers to Stakeholder Engagement and Information disclosure requirements of the ESF. The following are the objectives of ESS10:

- Establish a systematic approach to stakeholder engagement that will enable borrowers to identify and form constructive relationships with the relevant stakeholders, including Project Affected People (PAP).
- To assess the level of interest and support stakeholders have for the project and ensure that the stakeholders' views are incorporated into the project design through this mechanism.
- Encourage and facilitate methods of effective, meaningful consultation and engagement with PAPs throughout the project cycle on issues that could potentially have an impact on them
- Ensure that project information related to environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible, and appropriate manner and format.

148. ESS10 promotes meaningful consultation and communication with all stakeholders, and the process of stakeholder engagement involves the design and implementation of a Stakeholder Engagement Plan (SEP). The SEP covers the following aspects: (i) Stakeholder identification and analysis;

(ii) planning how stakeholder engagement will take place; (iii) disclosure of information;(iii) consultation with stakeholders; (iv) addressing and responding to grievances; (v) reporting back to stakeholders.

149. The SEP for ACCESS MPA program has been prepared. The coordination and monitoring mechanisms established in the SEP are overseen by inter-ministerial "Project Coordination Committee" (PCC) between the 3 IAs (RHD, NBR, BLPA) and other relevant agencies at the district and Upazillas level. As part of the ESIA, public participation consultation and 5 FGDs were conducted on different days and locations, and the participants included officials from Burimari, Patgram, local importers, community leaders, female laborers, and truck labor association representatives.

150. During the consultation, the participants were informed about:

- Background of ACCESS MPA project;
- Details about commencement of the sub project, about the land acquisition, compensation procedure for the land etc. The participants were informed about the ESF of World Bank, GoB land Acquisition Act of 2017, provisions of compensation as per GoB regulations, and the compensation and assistance therein and asked suggestions for improvement so that the project authority can incorporate their suggestions for the proposed ACCESS MPA project;
- Advantages and disadvantages of the project;
- Potential environmental and social impacts of the project and likely mitigation measures.

The consultations elicited from the participants the following:

- Details of the issues that should be given priority in land port development projects;
- Possible mitigation measures in case of adverse impacts;
- Means of better delivery of compensation and assistance;
- Their views on the project, especially the likely negative impacts;
- The assurance from the project authority not to marginalize people by depriving them of their livelihood.

151. Through public participation, stakeholders' viewpoints and suggestions were captured as input to the technical design, which was duly considered, and all the suggestions were incorporated in the project design to the extent feasible and warranted.

5.3 Stakeholder Consultations

Stakeholder engagement and public consultations were carried out in phases.

Phase 1: Public Participation

152. A public consultation meeting was held on the 13th December 2021 with the local communities. Additionally, meetings were also held with local government officials and customs officials. Photographs of these consultations are given in here of local consultations. During these consultations, leaflets on key environmental and social issues were distributed to the participants (prepared in the local language), and big posters were also displayed at the venue. The environmental and social experts made PowerPoint presentations. Participants were encouraged to ask questions on environmental and social issues. The local people who attended the discussion meeting included shopkeepers, business people, farmers, laborers, school teachers, Company Commander of BGB et al.

Phase 2: Focus Group Discussion (FGD)

153. The 5 FGDs were conducted from 10th December 2021 to 11th December 2021. The summary of the focused group discussion meeting (FGD) is shown. Attendances of Focus group discussion meetings are provided. The participants who attended the discussion were:

- Local Importers/ C&F Agents
- Local Males
- Local Females
- Community leaders

- Truck labor association representative

Table 5-1: Details of Consultation Meeting

Date	Meeting & Place	Male	Female	Total
10th December 2021	Focus Group Discussion (FGD) with Local Importers/ C&F Agents, FGD with Male	23	-	23
11th December 2021	FGD with Community elite persons, FGD with Truck labor association representative	17	13	30
13th December 2021	Public Consultation Meeting, Burimari Land Port, Burimari, Patgram, Lalmonirhat	40	-	40
Total			**-**	**93**

5.4 Stakeholder Assessment and Summary of the Consultations

154. The stakeholders of the Burimari land port improvement project include the (i) financing agencies, e.g., WB, GoB, and other donor agencies, (ii) government organizations involved in planning, design, and implementation, e.g., BLPA, DoE, Forest Department, Department of Agriculture Extension (DAE), Bangladesh Water Development Board (BWDB), Civil Administration (DCs), Public Representatives, NGOs, etc., (iii) Consultants and Contractor involved with the feasibility study, detailed design and bidding document preparation and implementation phases, (iv) PAPs affected positively and adversely, directly and indirectly and (v) transporters, transports workers/unions, labor at the port and their unions, traders/businesses including women traders. The three main categories of the stakeholders which have been considered in this report are: (i) Project affected parties; (ii) Other interested parties and (iii) Vulnerable and marginalized groups.

Summary of feedback from the consultations

155. In line with GoB and World Bank's Environmental and Social Standards, the project has employed a participatory approach in project design. PAPs raised several suggestions/ concerns, and the following is a summary of the incorporation of key concerns. The project's safeguard strategy principle is to mitigate to the highest extent possible.

- **Land Acquisition and Compensation related Aspects:** Compensation will be determined based on GoB law and WB ESS5. The entitlement matrix will be included in the RAP and shared locally.
- **Replacement of community structures:** The project's design ensures that there will be no impact on any religious structures like mosques, and temples. However, trees, some community structures, and squatters, and encroachers may be impacted negatively due to the project.
- **Safety Concerns:** Currently, children cross these roads to go to school; therefore, road safety during and after civil works needs to be accounted for in the C-ESMP.
- **SEA/SH/GBV:** As per the feedback from the consultation, the risk of SEA/SH for Burimari LP is low. There are no major cases reported in earlier at Buriamari regarding sexual harassment or abusing in work place. As well as from the perception of local people it was found that, no GBV risks were arisen in past at Burimari and people are aware of that issues. *(However, the SEA/SH risks for the other LPs are rated moderate, consistent with the project's overall SEA/SH risk rating. A Gender Action Plan (GAP) and SEA/SH Action Plan has been prepared for all the 3 IAs with specific references to BLPA (and Burimari LP) for the relevant mitigation measures. This also includes a consulting package to recruit an NGO to develop and execute public awareness campaign on human trafficking and SEA/SH at the land ports).*
- **Labor-related issue:** Along with labor management procedures, labor campsite management also needs to be developed to mitigate or reduce the impact of migrant workers on the local community.
- **Information dissemination:** Currently, the state of knowledge about the project among locals in the sub-project area is very low; therefore, targeted participatory measures will be taken to update

them on the sub-project and its timeline. The resettlement process begins long before land handover, and this sub-project will ensure that the affected parties have plenty of time to adjust and respond to the changes.

- **Minimization of Impacts:** The Design of the land port also considers possible environmental and social impacts. Furthermore, environmental and social mitigation and monitoring measures have been developed along with appropriate budget and institutional setup during construction and operation phases.

156. As part of the disclosure of the ESIA consultation, meetings were organized by the BLPA at Burimari Land Port, Burimari, Patgram, Lalmonirhat on 13th December 2021. In addition, 5 FGDs were conducted along with the project intervention from 10th to 11th December 2021.

5.4.1 Consultation Meeting with Officials (I)

Sl	Key issues raised	Participant/s type	Response
1	Brief on the project	AD, Burimari Land Port	• The AD of Burimari Land Port welcomed and thanked all the participants for their presence in the public consultation meeting. Then he gave a brief on the project.
		Environmental and Social consultants	• The consultants discussed to the participants what environmental and social standards be maintained throughout the project, like preparing separate documents on Environmental and Social Management Framework (ESMF), Environmental and Social Impact Assessment (ESIA), Stakeholder Engagement Plan (SEP), Labor Management Procedure (LMP), Resettlement Policy Framework (RPF), Resettlement Action Plan (RAP), Sexual Exploitation & Abuse and Sexual Harassment (SEA/SH) and Gender Action Plan (GAP), Environmental and Social Commitment Plan (ESCP)
		Company Commander, Border Guard Bangladesh (BGB)	• The BGB company commander then said that his organization would implement the project.
2	How is the price determined in the case of land acquisition?	AD, Burimari Land Port	• Social consultants firstly said that, for the development or expansion of the existing land port, according to the World Bank's Environmental and Social Framework (ESF), the project Implementing Agency's primary target is to avoid any private property/ land acquisition. If it is not avoidable, the sub-project will follow the Resettlement Policy Framework and Resettlement Action Plan for land acquisition, where policy from the Government of Bangladesh and The World Bank will be followed. It was also discussed that to determine the price of land or any loss (e.g. structures, crops, trees, business, etc.), there will be Property Valuation/Market Survey.
		Mr. Sayed, President, C&F Agents Union	• He said that, if possible, there would be about 25 acres of vacant land on the east side of the present port. That space can be acquired and used for project work.

Sl	Key issues raised	Participant/s type	Response
3	If someone runs a floating business on another's land or Government-owned land (Khas), and if that business is affected, how will that person be paid compensation?	Md. Anowar Hossain (In-Charge, Immigration Police, Burimari land port)	• Answering the question raised by the Immigration Police consultants discussed in the meeting that any business, whether small, medium or large, permanent or temporary, would be compensated if affected by the project. • If the land acquisition occurs, the participant also wanted to know that compensation will be determined for the lands on the front side, away from the main road. Consultants informed that by evaluating the market survey and government rate, land price, all affected person/s should get a fair price for their land parcel.
4	If the land acquisition takes place, what will the community living very close to the land port do	From representatives that are living in the proposed land area adjacent to the existing land port (near zero point)	• Consultants assured them that the project would follow the RAP if the land acquisition were unavoidable. Accordingly, affected persons will be compensated and provided support for their resettlement.
5	The education system and children's security	Mst. Rahena Sultana, Head Teacher of primary school, and Community representatives	• Stone is the most important of the various products imported through this land port. The stone-crushing business around this port area is currently making a considerable contribution to the economy of Burimari. But due to the business of stone crushing, stone powder, etc., the environment has become much polluted in the area around 5/8 km near Burimari port. All the citizens living here are moving in a dusty and sandy environment. As a result, people suffer from shortness of breath, asthma, cold, and cough. The headmistress drew the attention of the authorities to keep in mind reducing the environmental pollution by expanding and modernizing the port area. • The participants agreed with what she said, and they suggested that a particular area with a boundary is set up in an uninhabited area for the stone-related businesses and that the companies regularly set up sprinklers on their behalf abide by those rules. • Nearly one-third of the participant said that the education system in this area is poor. In addition, it is plagued with various problems due to which the number of school dropouts is also high. • More than 15 primary schools are located in this area, contrarily only 1 high school and 1 college which is 6 kilometers away from this area. • The Head Teacher said that in the interest of the country's development, we have to take any action positively. But the project will be implemented by prioritizing the 6 basic needs of the people - that is what they hope. Burimari is not as green as before. All the trees in the area are now covered in dust. If the Ministry of

Sl	Key issues raised	Participant/s type	Response
			Environment initiates a tree planting program here, it is perfect for the area. • Excessive load-shedding has resulted in students not being able to study correctly.
6	Labor-related issues	Mst. Rahena Sultana, Head Teacher of primary school	• All workers who come to the area to work on the project must ensure that they are provided with the Covid-19 vaccine. • The use of gloves, helmets, boots, etc., should be ensured to avoid the risk of accidents and the safety of those who will work as laborers.
		President, Land port labor union	• About 3000 workers are involved in various activities of the port. They do not have restrooms, toilets, overnight accommodation, etc., in the port area.
		Mr. Sayed, President, C&F Agents Union	• There is no accommodation for the drivers of freight vehicles arriving in the port area. Most incoming drivers spend the night in freight cars or trucks, which is very risky to do their job correctly. So accommodation needs to be arranged for them.
7	Communication facilities	All Participants	• Getting students to school is challenging as they have to sit in traffic jams for a long time almost every day. In addition, Heavy mud on rainy days and extensive dust in regular times create tremendous suffering for the school-college-going children. • Furthermore, road accident happens very often there. Driving overloaded trucks on minor width roads is responsible for accidents. • Accidents often happen because of narrow roads, broken roads. In addition, dust severe traffic congestion has made communication in this area difficult. • Communication will be more accessible if a bypass road from Burimari Land port zero-point with the railway line. Undoubtedly it will be a tremendous support for residents.
		Mr. Sayed, President, C&F Agents Union	• The highway, which started from the Burimari Zero Point area and passed through Burimari Bazar towards Patgram, is narrow considering the number of vehicles currently plying in the area. This road needs to be at least 6 lanes. This will almost wholly alleviate the severe traffic congestion in the area.
		Company Commander, Border Guard Bangladesh (BGB)	• He said if the port is developed, the country will develop. First, the allocation of BGB's security needs to be expanded. The existing highways need to be widened. A separate walkway has to be built for people to walk. In this project, all the infrastructural development has to be done considering Burimari port, but infrastructural development has to be done keeping in view the common person.
8	Health system of this area	All Participants	• Nearly all the participants said that the health system of this area is terrible. Even in Sadar Hospital, Community Clinics, Upazilla Health

Sl	Key issues raised	Participant/s type	Response
			Complex don't have sufficient medical facilities, they don't even expect adequate service nowadays. • Consequently, critical patients are taken to rangpur medical to get proper treatment. • At least 70 people in this area have died of silicosis due to excessive air pollution, and 100 more people are still infected. • Many residents of this area suffer from Asthma, silicosis, shortness of breath, and other critical diseases due to open stone crushing miles.
9	Environmental awareness of the stone crushing company	All Participants	• The majority of the participants blame 'Stone traders' for environmental pollution as crushing rocks in the open air, the dust of the rock spreads in the air and pollutes the air. • After being washed by rain water, this dust goes into rivers or reservoirs and causes water pollution. • As there is a possibility of air pollution by the project, the authority should take necessary steps to reduce the environmental pollution. • Wastes of this project should be kept or managed away from localities. • If the stone crushing traders water regularly, the dust will be reduced in this area. • Regular monitoring by law enforcement agencies will reduce such irregularities.
		Mr. Sayed, President, C&F Agents Union	• At present, the volume of Burimari land port-centric business has increased many times over. The area of Burimari land port is presently approximately 11 acres. Even if the size of the port is increased 10 times more than it is now, it will not be enough to run port-based businesses. • Neither the traders nor the appropriate authorities are responsible for reducing the environmental pollution by the stone business. The stoneworkers are risking their lives to earn a living. The stone business is one of the major contributors to the region's economy. According to the government policy, all the stone crushing businesses are supposed to operate within 3 km of the port area, but the stone business establishments are spread over about 8 km. Therefore, administrative monitoring is very important for sustaining the business and keeping the environment safe.
10	Development of Land Port Immigration related issues and other facilities	Md. Anowar Hossain (In-Charge, Immigration Police, Burimari land port)	• The current situation of rest, toilets, food intake for our immigrant passengers is very inadequate compared to other countries in the international arena. Since they have to face immigration first by crossing the border from a neighboring country, their first impression of our country will be positive once immigration meets international standards. So, we want a tidy, tidy, clean immigration.

Sl	Key issues raised	Participant/s type	Response
11	What should be kept in mind for this project?	All Participants	• There are no residential facilities for drivers and staff from India or other countries, and there are no toilet or bathing facilities. These issues must be kept in mind planning this project. • A mosque should be built within the port boundary so that workers can pray in time properly. • A foot-over bridge needs to be installed in the land port area to reduce road accidents. • The laborers are often victims of accidents. Contrarily, there are no insurance facilities for them. There should be an insurance facility where they can get support.

Figure 5.1: Consultation Meeting, Burimari Land Port, Burimari, Patgram, Lalmonirhat

5.4.2 Summary of Focus Group Discussion

Issues discussed	Participants, Opinion, comments, and suggestions	Response to Questions / Action Point
The general perception about the project	**Local Importers/ C&F Agents:** Respondents said they did not know anything about land port development activities. Therefore, they think that the port development activities will bring opportunities for improvement in their area.	Participants in the discussion were given a brief overview of the ACCESS MPA program.

Issues discussed	Participants, Opinion, comments, and suggestions	Response to Questions / Action Point
	Community elite persons: Almost all the respondents said they heard this issue in public for a few days. Notwithstanding, they wanted proper development therein. **Female:** They said they had not heard anything about the project from anyone. **Male:** Most of them did not know of any projects related to Burimari land port development activities. Some said they heard something regarding this in public. **Truck labor association representative:** The respondents said last few days that they heard that the surrounding area adjacent to the land port would be acquired. They believe that if this project executes there, it will assist them in their economic development.	
Advantages and Disadvantages (Who will directly be affected directly/indirectly)	**Local Importers/ C&F Agents:** The port development helps all the people involved in port-related activities, especially the importers, directly benefit. The landowners whose land will acquire for this project; will face a massive loss if they are not provided reasonable compensation. **Community elite persons:** All the respondents said that this area would develop economic development if this project were executed. This area will be cramped with vehicles and visitors if there will no proper management. This project will directly affect the landowner, imported-exporter, businessman, and the local people will indirectly be affected. **Female:** The women participants said if the size of the port is increased as a part of the project work, those living on the north side of the port will suffer as they will lose their land. Besides, no one has said anything about the advantages of the project. **Male:** They think that the project's impact will be the economic development of the area, which means that the socio-economic condition of the people of the area will also be better. About inconvenience, they said due to lack of proper management/ monitoring. The authorities cannot correctly manage the port's activities. The environment of their area is already much polluted due to the stone-crushing activities resulting in respiratory diseases.	
What issues should be given priority in this project planning	They suggested some points these are given below; 1. Port area size should be increased 3 times more than at present 2. highway adjacent to the port has to be upgraded to 4 or 6 lane roads, starting from Zero Point to at least 10 km 3. To reduce the amount of dust, regular water sprinkling should be done by a water truck 4. Parking area should be increased 5. A bypass road should be constructed along the railway line	

Issues discussed	Participants, Opinion, comments, and suggestions	Response to Questions / Action Point
	6. Planned sewerage system should be maintained 7. Stone-breaking businesses scattered over a wide area should be allowed to conduct business by enclosing the boundaries in a specific place 8. The bank is located about 3 km away from the port. Therefore, it is important to set up bank branches inside the port to prevent wastage of time for traders 9. It is necessary to set up a mosque inside the port 10. A modern fire service system is required 11. It is necessary to increase the skilled manpower in different institutions or departments of the port	
Impacts due to this project and how safe is the environment for women and children	**Local Importers/ C&F Agents:** They believe that the project will not specifically impact women and children but all the people living in and around the project area. They said the Burimari area is safe enough for everyone, men and women alike. **Community elite persons:** The majority said they did not think the project would have any particular impact on women and children. They added that no snatching, theft, or anything like this isn't often heard. **Female:** They said the project does not have any special impact on women or children, but there is already heavy traffic in the area, making it difficult for common people or school-going children to travel anywhere. **Male:** They said Burimari is safe for women and children to move around. However, they believe that environmental pollution in the area may increase, increasing health risks for people of all walks of life, not just women and children.	
Incidents of violence/torture/ sexual harassment of local women and female workers who work in Land port.	**Community elite persons:** They said they didn't hear anything regarding violence or Sexual harassment of women except a few. They also said their community leaders are aware of such offenses. If they find anything alike, they and law enforcement agencies take action immediately. According to them, no female day labor works in this port. **Female:** The respondents said there had never been violence or torture against women in the area. They said they did not know if the area's women had worked as laborers in any project before. **Male:** All the respondents said no violence against women had occurred in this area before. No untoward incident has ever taken place with any female worker.	
Impact of non-local workers who will join this project activity and employment	**Local Importers/ C&F Agents:** Workers coming to work on the project will not have any problem working or staying in the area, they said. Local	The project will have a Grievance Redress Committee to resolve all complaints/grievances.

Issues discussed	Participants, Opinion, comments, and suggestions	Response to Questions / Action Point
opportunity for local workers to this project	people will be interested in working if there is an opportunity to participate in project work. **Community Elite Person:** There would be no problem if the authority recruits non-local workers. And they suggested that local workers should be given priority in this project. **Male**: They said there would be no particular difficulty for their area. However, if the supply of all the workers is brought from elsewhere, many people will be deprived of working therein. **Female:** According to the respondents, it is better to employ locals as laborers in the project, and there will be no such problem if workers are hired from another place. **Truck Labor association representatives:** They do not know whether there is any problem raised when constructing land port, but no worker was appointed from the area. Later on, the people of the area expressed their dissatisfaction. They believe that socio-economic development will be possible if proper action plans for women are formulated with the project and involve the local women.	Respondents were also consulted on who could be a member of such a committee.
Land Acquisition and compensation	**Local Importers/ C&F Agents:** They said that if the the land were acquired in the interest of the project in the port area, there would be no unique problem if the landowners were given proper compensation. **Community elite persons:** All the respondents said reasonable compensation should be paid through proper authority without any hassle, and authority should be kept in mind that in no way do the local people avoid the opportunity to work on the project. **Male:** They said their prior experiences with the land acquisition weren't good enough. They had to pay a bribe to get their compensation.	Participants were assured that the first step is to avoid acquisition as much as possible. If it is necessary to acquire land exclusively, a Resettlement Action Plan (RAP) will be prepared for the Burimari Land Port area under the Resettlement Policy Framework (RPF). According to the RAP, compensation to the owners for the land acquired will be followed.
Perception about conflict resolving committee	All the participants said they don't have such a committee yet, but if there is any, that must help prevent any conflicts. They wanted a committee consisting of concerned authorities and local people's representatives to report any grievances or problems related to the project.	
Waste Management	**Local Importers/ C&F Agents:** They suggest that the materials or construction materials used in the project should be kept in a designated place and covered with tarpaulin material when the work is stopped to prevent the spread of such materials on the roads. **Community Elite Person:** If the resources were not appropriately used in this project, environmental pollution and the tremendous suffering of the area's people would increase a lot. Project authorities should take workable action for this.	

Issues discussed	Participants, Opinion, comments, and suggestions	Response to Questions / Action Point
	Male: they said when the construction work for the development of port infrastructure starts, if the concerned people make arrangements for the regular sprinkling of water on the roads, then the rate of dust and sand spreading in the air can be controlled to a great extent. **Female:** They said it is common to see in these works that rods, sand, etc., construction materials are left on the road, which creates widespread problems in movement. They said that if the daily wastage is removed every day, there will be no harm to the environment.	
Impact on Environment due to this project	**Local Importers/ C&F Agents:** The said lack of proper construction material management may cause environmental pollution. **Community Elite Person:** This area consists of stone crushing miles and passing a massive number of vehicles, sand, dust, and other particles mixing with air which cause several respiratory diseases. **Male:** They said their existing environment situation is terrible. There is a chance to increase pollution if there is no proper plan for environmental management.	
Educational Institutions	Respondents said there are 10/15 primary schools in Burimari union where there is only 1 secondary and higher secondary college. There are also 7/8 Nurani madrasah and 1 Government Madrasah in Burimari.	
Effect on ethnic group	They said there is no ethnic group in Burimari	
Damage of Educational/religious/cultural institutions or heritage sites	They said there is no such institution/sites in the sub-project area.	
Health care	**Local Importers/ C&F Agents:** Patgram Upazilla Health Complex is about 15 km away from Burimari. Besides, there is no other medical service provider nearby in their area. People usually go to the local pharmacy or village doctors for early ailments. There is no first aid facility inside the port. **Community Elite Person:** They said People in the area are deprived of proper healthcare. The nearest ham quack is 2 km away. Even Upazilla health Complex Sadar hospital doesn't have proper treatment. **Male**: Discussions on healthcare in the area revealed that quality healthcare providers are almost non-existent. People of the area have to rely on Lalmonirhat Sadar or Rangpur Sadar to get good medical care. Respondents said they receive medical services mainly from local pharmacies. **Female:** They said if a patient's condition is critical or a dying patient, the area's people take him directly to Rangpur Medical without taking him to Upazilla Health Complex or Lalmonirhat Sadar Hospital.	

Issues discussed	Participants, Opinion, comments, and suggestions	Response to Questions / Action Point
	Truck labor association representative said that health services in this area are indigent. If someone is sick, he first buys medicine from the pharmacy. When the situation is out of control, they are taken to Rangpur Medical College Hospital.	
Child marriage and Dowry system	**Female:** The respondents said that child marriage is almost non-existent in the area at present. But on the question of dowry, they said there is no marriage in their area without a dowry. Dowry is exchanged at the time of marriage in almost all families, and there is no such difference in the exchange of dowry between affluent or relatively low-income families. Dowry is exchanged according to the ability of each family in this area. **Community Elite Person:** They said dowry is the major problem for marriage though the percentage of child marriage is almost zero. **Male:** Respondents said that 10% of child marriages are prevalent in their area. And this practice is more common in impoverished families. However, exchanging dowry in marriage is seen in 100% of the families in the area. Dowry is a social custom in the area, they said.	
Communication system	**Community Elite Person:** the construction of some new roads, such as a bypass road from Burimari railway station to the land port, would greatly benefit people. **Male:** Participants said that roads are not good. The road from Burimari port to Patgram through Burimari market is almost broken. Attempts to repair the road have not been made as long as heavy freight vehicles are exceeded. The stone-breaking business is spread in a scattered or unexpected way up to about 5/6 km from the port area.	
Labor Law	**Truck labor association representative:** When asked about the labor law, the participants presented could not give a clear idea. The truck owner said he had heard about the labor law but had no idea why and how it was enforced. Even today, no person or organization has told us anything about this. He said that the workers in this area have to work for themselves.	Under the sub-project, a standalone LMP has been prepared ensuring various instructions regarding labor-related issues.

Chapter 6. Analysis of Alternatives

6.1 With Project Scenario

157. Burimari land port is situated at Burimari Union in Patgram sub-district. It is the 3rd largest land port of Bangladesh. In 1988 Burimari land port was established at Burimari zero point for import and export goods with India, Bhutan, and Nepal by road. Burimari Land Port is connected by road and rail networks, but the train route is limited within Rangpur. If the train route is extended to Dhaka, it will be more effective for business. The river does not connect it, but the Dharala river is beside the project boundary. The river route was not operational since the independence of Bangladesh. Significant investment may be required to operationalize river port facilities and secure the river route by dredging.

158. Despite the constraint described above, if the export/import characteristics on the corridor fulfill primary conditions for multi-modal transport such as (1) the origins and destinations of the goods are not dispersed, (2) the transport distances are long enough to deploy multi-modal transport (road ~ railway or river ~ road), multimodal transport options should be investigated.

159. In Burimari, the proposed sub-project mainly consists of Khas (government) land. Thus, there is no significant need for shifting and no impact on human settlement. As the proposed sub-project expands the existing Burimari land port, the best option is to locate the activities adjacent to it as this has the best communication facilities. The area selected for expansion is the best option for this project.

160. The proposed project's implementation will significantly influence investment, employment, indirect sources of income, education, and the community's socioeconomic standing. The provision of high-quality facilities will improve people's quality of life. The sub-project will assist in creating job prospects for a large number of people. Using efficient and effective technologies, the proposed Project's implementation will have minor and inconsequential environmental implications. Traders, truckers, and passengers may experience a minor disruption during construction. To counteract this, a temporary movement diversion route will be suggested.

161. According to the impact study, most of the impacts will occur during the project's development phase and will be minor. Specific positive effects on socioeconomic status should occur during the operating phase. Adopting new technologies, suitable mitigation measures, and sound engineering designs can help offset the detrimental effects. As a result, the proposed site is more practicable than the other site when all technological, social, and environmental considerations are considered. In terms of economics, the recommended site is also more realistic.

6.2 Without Project Scenario

162. If the Sub-project is not implemented, the people living in the Sub-project region continue to face the same issues. The region will be deprived of the potential for expanded production, the formation of new economic activity, and employment if it does not have a good investment infrastructure.

163. There are no other options for the current infrastructure and roadways. The design is created keeping the current infrastructure and roadways in mind. Existing facilities will not be dismantled unless new facilities for drivers and laborers and a passenger terminal, passenger parking, and pedestrian road/access are built.

164. In the without project scenario, the opportunity to bring enhancements in the environmental and social sectors of the project area will be lost.

Chapter 7. Environmental and Social Risks and Impacts

7.1 Introduction

165. Due to the initiative, individuals and communities living in the project's influence area will experience both positive and negative environmental and social effects. The projected area Burimari is busy, and project interventions exacerbate traffic congestion. Congestion on this and other roadways is a common and uncontrollable occurrence. Furthermore, due to the project's size, there may be an inflow of migrant workers in the sub-project areas, posing a slew of socio-economic issues. As a result of the civil works, community health and safety and gender-based violence incidents may increase. These are some of the most important aspects of this evaluation.

166. During the impact assessment survey, residents, potential PAPs, community leaders, various groups residing in the sub-project area, district-level authorities, and various government entities were all included in a participatory process. The use of a participative process aids in the identification of public concerns and needs in connection to the project's impact and possible mitigation strategy. In designing alternatives, efforts have been made to accommodate their perspectives as much as possible. Construction-related risks and impacts, such as increased risk to workers' and communities' health and safety, increased traffic flow and traffic-related accidents, and social issues associated with increased labor influx, such as gender-based violence and child labor, are expected to occur during construction.

7.2 Risk Assessment Methodology

7.2.1 Assigning Risk

167. Following the magnitude assessment, the quality and sensitivity of the receiving environment receptor shall be determined. The significance of each potential impact will be established using the risk classification matrix shown in Table 7.1 and accordance with the ESS1 standard of the potential four risk categories, viz. **High, Substantial, Moderate, and Low**. Risk screening criteria based on WB ESF were used to investigate the project's risks and consequences, and the risk classification for this project is displayed in Table 7.1. The outcome of the screening process determines the sub-project category in terms of its environmental and social risks High, Substantial, Moderate, or Low. Thus, considering potential environmental impacts and their significance, the proposed sub-project Burimari Land Port is categorized as 'Substantial' Risk.

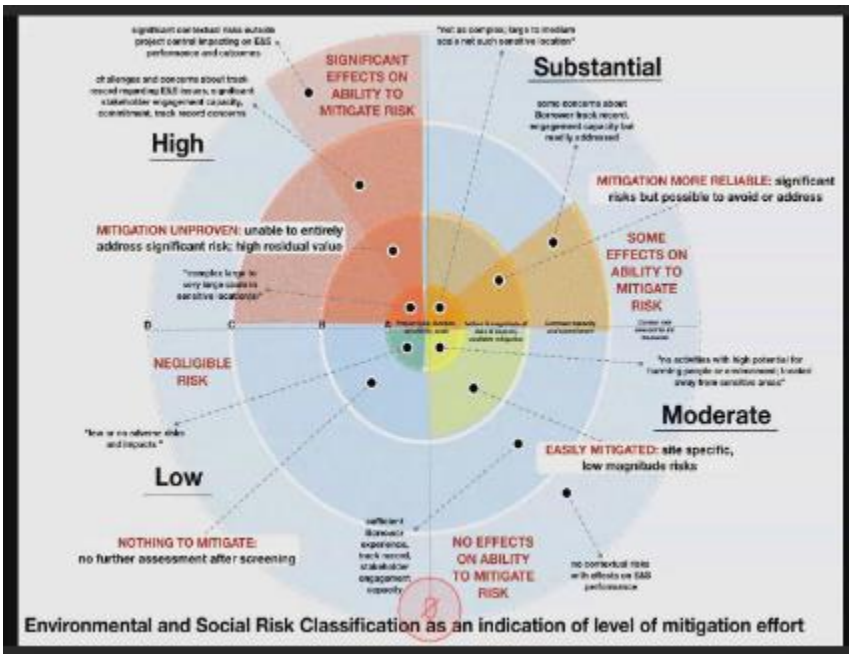


Figure 7.1: Environmental and Social Risk Classification

Table 7-1: Risk Screening Criteria

Risk Category	Screening Criteria
High	The resource/receptor would almost certainly be subjected to a large-scale impact that would last for a long time, span a large area, exceed national/international standards, endanger public health and safety, threaten a species or habitat of national or international significance, and exceed a community's resilience and ability to adapt to change. The Project may have trouble complying with the appropriate ESF requirement, necessitating extensive mitigation.
Substantial	The resource/receptor would show a significant difference from baseline conditions, approaching but not exceeding appropriate requirements. Although the project would meet the applicable ESF criterion, mitigation would be necessary.
Moderate	The resource/receptor would be affected, but the size of the effect would be minimal enough (with or without mitigation) that the overall effect would be well within acceptable limits. Although the project would meet the appropriate ESF criterion, mitigation may be necessary.
Low	Either the resource/receptor will be unaffected, or the effect will be undetectable or indistinguishable from natural background variation. The project would meet the applicable ESF criterion, and mitigation would not be necessary in most cases.

7.2.2 Impact Assessment

168. The impacts that arise from particular configurations of infrastructure development activities and landscape features may emerge in different forms and through various pathways. It is to consider the types of impacts that may come into play - some of which may be more immediately obvious than others - when assessing the potential effects on people and nature in the surrounding environment.

7.2.2.1 Magnitude of Impact

169. The assessment of magnitude shall be undertaken in two steps. Firstly, the key issues associated with the project are categorized as beneficial or adverse. Secondly, potential impacts shall be categorized as Very High, High, Moderate, and Low based on consideration of the parameters such as:

- The ability of people and the ecosystem to cope with change
- The spatial extent of the potential impact;
- Duration of the potential impact;
- Timing of effects experienced;
- Nature of cause-and-effect;
- Relationship of project activities to impacts from other sources in landscape

170. The magnitude of potential impacts of the program shall be identified according to the categories outlined in Table 7.2.

Table 7-2: Parameters for Determining Magnitude of Impact

Parameter	Very High	High	Moderate	Low/Nil
Ability of people and ecosystem to cope with change	The capacity of the ecosystem and people to cope with the impact is not certain	The resilience and adaptive capacity to the impacts is regenerative with extensive management	Ecosystem can cope with the changes with specific planning and management	Ecosystem can cope with the changes with limited responses
Spatial extent of the potential impact	Widespread far beyond program boundaries	Beyond immediate Program components, site boundaries, or local area	Within program boundary	Specific location within program component or site boundaries with no detectable potential impact

Parameter	Very High	High	Moderate	Low/Nil
Duration of the potential impact	Long term (more than 20 years)	Medium Term Lifespan of the Program (5 to 10 years)	Less than program lifespan	Temporary with no detectable potential impact
Timing of effects experienced	Potential impact is effectively permanent, requiring considerable intervention to return to baseline	Potential impact requires a year or so with some interventions to return to baseline	Baseline returns Naturally or with limited intervention within a few months	Baseline remains constant
Nature of cause-and-effect	Potential impacts related to the program are constantly occurring at the same time and place	Occurs under worst cases during the program implementation conditions	Occurs under abnormal, exceptional, or emergency conditions (occasional)	Unlikely to occur
Relationship of project activities to impacts from other sources in landscape	The activity will cause several effects and difficult to predict and manage with all of its negative impacts	The activity will cause effects and relatively easier to predict and manage its negative impact	The activity will cause effects and easy to predict and manage	Temporary with detectable potential impact

7.2.2.2 Sensitivity of Receptor

171. The sensitivity of a receptor shall be determined based on the review of the population (including proximity/numbers/vulnerability) and the presence of features on the site or the surrounding area. Criteria for determining receptor sensitivity of the program's potential impacts are outlined in Table 7.3.

Table 7-3: Criteria for Determining Sensitivity

Sensitivity Determination	Definition
Very Severe	The vulnerable receptor with little or no capacity to absorb proposed changes or minimal opportunities for mitigation.
Severe	The vulnerable receptor with little or no capacity to absorb proposed changes or limited opportunities for mitigation.
Mild	The vulnerable receptor with some capacity to absorb proposed changes or moderate opportunities for mitigation
Low/Negligible	The vulnerable receptor with good capacity to absorb proposed changes or/and good opportunities for mitigation

7.2.3 Assigning Risk Significance

172. The magnitude of Impact and Sensitivity receptor are key factors for assigning the project's risk significance. From the criteria mentioned above of impact assessment, the overall risk has been assigned. Table 7.4 shows the outcome and the consequences of the magnitude of impact and receptor sensitivity.

Table 7-4: Assessment of Risk Significance

Magnitude of Potential impact	Sensitivity of Receptors				
	Very Severe	Severe	Mild	Low	Negligible
Very High	-	-	**Substantial**	**Substantial**	**Moderate**
High	-	-	**Substantial**	**Moderate**	**Moderate**
Moderate	**Substantial**	**Substantial**	**Moderate**	**Moderate**	**Low**
Low	**Moderate**	**Moderate**	**Moderate**	**Moderate**	**Low**
Nil	**Moderate**	**Moderate**	**Low**	**Low**	**Low**

7.3 Risk Assessment of the Project

173. In Burimari, the proposed activities are assessed to have 'Substantial' E&S risks with no significant residual environmental and social impacts. Furthermore, there appear to be no environmentally sensitive areas affected by the project activities. BLPA has demonstrated under the ACCESS MPA project; Phase-1 that it can manage environmental risks and impacts satisfactorily. With training and capacity building, and specialist support, it is expected that the anticipated environmental risks can be managed. On the other hand, the social risk rating for the sub-project Burimari Land Port is considered as **'Substantial'** risk. based on land acquisition, labour influx issues, CHS/OHS, SEA/SH etc**.** A small amount of land acquisition which is 3.51 acre with minimum physical and economic displacement might be required. The generic adverse impact assessment matrix for the project intervention is given in the following table 7.5.

Table 7-5: Generic Adverse Impact Assessment Matrix for the Project Intervention

ESF Standards, Environmental and Social Risks, and impacts	Risk Rating		Rationale
	Construction stage	Operation stage	
ESS1 Assessment and Management of E&S Risks and Impacts			
Vulnerable groups	Substantial	Low	The proposed sub-project will likely result in physical and economic displacement within the project area. On the other hand, vulnerable groups are likely to be disproportionately affected. The socio-economic survey identified HHs with an income of less than or equal to BDT 5000, disabled people, female Headed HHs, and people over the age of 60. A large proportion of people living in the surveyed HH earn less than BDT 5000 per month. As a result, if construction work creates access barriers to labor markets for these individuals, they may become economically vulnerable. Furthermore, the land acquisition may force some people to become marginal farmers or landless, exposing them to vulnerability. The sub-project is likely to benefit vulnerable groups economically, and the impact on them during operation is likely to be minimal.
Cumulative Impacts	Moderate	Low	There are currently no major projects underway on the Burimari Land Port, and the cumulative impact of the project is most likely to be felt during the construction stage. Positive cumulative impacts, on the other hand, are expected to outweigh any cumulative negative impacts, as the region is expected to be economically transformed once the project is completed.
Associated Facilities	Not applicable for this project		
ESS 2 Labour and Working Conditions			
Working conditions	Moderate	Low	Poor working conditions are a common issue with large-scale construction projects throughout Bangladesh. Previous infrastructure development projects at Burimari area have shown that the work nature is mostly labor intensive. Since the living facilities within the small area are limited therefore the additional workforce may not have adequate resources meet the requirement of good working conditions during construction. So, this sub-project is likely to have a moderate impact on working conditions.
Worker accommodation	Substantial	Low	In Bangladesh, providing inadequate worker accommodations is a common issue. Because immigrant workers are likely to face the risk of accommodation at construction sites, appropriate measures must be developed to ensure that immigrant workers find separate housing and have the necessary amenities, reducing the likelihood of conflict with local communities. In this regard, the World Bank's ESS2 on labor and working conditions measures for worker accommodation should be followed.
Child Labour	Substantial	Low	Child labor is a widespread issue in Bangladesh. There is a risk of using children in various stages of the project, and thus the sub-project may endanger the safety and rights of the children involved. According to the social survey, there is a low likelihood that children from the local community will be involved in the project as child laborers.

ESF Standards, Environmental and Social Risks, and impacts	Risk Rating		Rationale
	Construction stage	Operation stage	
Labor influx	Moderate	Low	The contractors usually prefer to bring in their own-sourced laborers. However, BLPA will encourage employment of local labor, except those that are not available locally/in the district which will be included in the bid documents. The LMP and SEA/SH Action Plan include specific risk mitigation and management measures as prepared during the construction phase specially.
Occupational Health and Safety	Substantial	Low	Workers may be exposed to various health risks and hazards while working on a construction site. Accidents and health hazards are likely during excavation, operation of construction vehicles such as excavators and dump trucks, operation of crusher plants, and operation of quarry sites. Without adequate safety measures, workers may sustain injuries and accidents (sometimes resulting in fatalities). The Covid-19 pandemic is a major concern as the virus transmits one to another. The workplace environment needs to be adjusted.
ESS 3 Resource Efficiency and Pollution Prevention Management			
Landscape aesthetic	Moderate	Moderate	The stockpiling of materials, construction excavation for structures, and clearance of vegetation are some of the issues related to the general aesthetics. Long-term effect due to vegetation clearing.
Air pollution	Substantial	Moderate	Burimari area is already possessed with air pollution due to heavy stone crusher plants. In addition, excavation of land may result in air pollution during construction. The impact of dust and noise pollution on settlement areas caused by crusher plants, batching plants, and nearby plants may cause air and noise pollution, affecting nearby settlements and other establishments. The operational phase will have a higher traffic volume, which may cause some dust pollution, though not as much as the construction stage.
Potential hazards caused by bitumen and other toxic chemicals	Moderate	Moderate	During the construction process, the use of chemically hazardous materials for roads such as epoxy, gypsum, additives, admixtures, cement, bitumen, and so on is unavoidable. Special precautionary measures should be taken when storing such chemicals. Containers of such chemicals, such as bitumen drums, are frequently damaged during transit, resulting in a leakage in storage areas that are frequently not or inadequately cleaned up afterward.
Noise pollution	Substantial	Moderate	Noise pollution is likely due to the operation of excavators, crusher plants, batching, and concrete-mixing plants, and their activities cause inconvenience to nearby settlements in terms of noise pollution. During the operational phase, the noise levels are anticipated to increase due to traffic-related noise pollution, vibrations from engines and tires, and mainly pressure horns Since the land port area will be expanded in a planned manner, therefore risks will be reduced in operational phase.
Solid waste management	Moderate	Low	Construction activities will generate solid wastes including hazardous wastes. The direct disposal of waste from construction camps and yards during the construction period, as well as income generation activities such as small enterprises along the road, is likely to cause bad odor, blockage and obstruction of roadside drains, traffic congestion, contamination of ground, and river water, and contamination of agricultural land

ESF Standards, Environmental and Social Risks, and impacts	Risk Rating		Rationale
	Construction stage	Operation stage	
			close to the sub-project boundary. In operation phase the risks will be limited with sufficient waste management facilities.
Pollution of water resources	Moderate	Low	Water quality in the existing Dharala river is likely to deteriorate, particularly during construction, due to the disposal of soil and chemical wastes from construction sites and camps. During operations, the impact on water sources from vehicle washing, spillage, fuel leakage, poor sanitation practices, increased human activities/settlement/market center is very likely.
Land-use change	Moderate	Moderate	Expanding this existing port area requires primarily barren land, no agricultural land, and water bodies to fill. Within the area of activities, a few settlements need to shift. Lands such as barren land and flood plain will be used temporarily to establish labor camps, crusher sites, worker campsites, spoil disposal and will be changed during the construction period. Several commercial activities will begin during the operation phase due to improvements to transportation infrastructure. So, there are no significant possibilities of land-use change within the project intervention area during construction and operation phases.
Ecosystem Services	Moderate	Moderate	The Sub-project area provides a wide range of ecosystem services to people, including fish, non-timber forest products, and medicinal herbs. Various project activities, including but not limited to the construction of civil works can potentially impact these services.
ESS4 Community Health and Safety			
Traffic management	Substantial	Moderate	Managing traffic along the sub-project boundaries will be challenging during construction work. As this is the existing port area and the road is narrow; hence, vehicles' movement of construction materials may cause a traffic jam. A traffic management plan will be prepared before the construction to mitigate the concerns. When existing land ports are expanded, there may be additional traffic, but the well-managed traffic system implemented by BLPA can reduce traffic congestion.
Traffic and Road Safety	Substantial	Moderate	Heavy truck cargo movement may cause traffic congestion and accidents in the sub-project area. It can also be a major issue during the construction and operations of the project. Increasing awareness among Bangladeshi and Indian drivers will also reduce the rate of accidents.
Community Exposure to Health Issues	Moderate	Low	Labor influx is anticipated to be low to moderate but the local host communities may still be at risk of contracting various communicable diseases, including STDs. Poor sanitation practices by the outside labor force in camps and construction sites are likely to cause community health issues. There is a risk of price inflation for goods and commodities along the port area. Inter-cultural differences between migrants and the local community may also lead to social unrest and conflict. On the other hand, the social surveys indicated that the community would accommodate the project workers and that with various safeguards in place, such as GRM, enforcement of Code of Conduct, etc. the likelihood of conflict would be low. Separate worker housing/labor camps will improve relations between migrant labor and the community.

ESF Standards, Environmental and Social Risks, and impacts	Risk Rating		Rationale
	Construction stage	Operation stage	
Hazardous Materials	Moderate	Low	A clear picture has been extracted from the baseline survey that the sub-project areas are so dusty and pollution level is high due to stone crusher activity and vehicular movement. The handling and movement of hazardous materials during the construction period possess some risks and impacts, but the quantity will be low. So, hazardous materials are not likely to create major risks and impacts in the sub-project area.
Emergency Preparedness and Response	Substantial	Substantial	The project poses several risks to local communities, including frequent traffic accidents for reckless driving, accident by stone crusher machine, etc., creating the need to establish emergency preparedness and response along the project intervention area.
SEA/SH	Substantial	Low	The sub-project anticipates low to moderate labor influx, although most of the unskilled and semi-skilled labor are expected to be recruited from the local communities with only the skilled and some semi-skilled labor employed from outside. The social survey revealed skewed attitudes toward women's roles in society, which is the prevalent norms in contemporary Bangladeshi society, FGDs with various groups, including women, show that they do not expect the gender gap to worsen due to the influx of labor. There are no issues regarding girl/women trafficking as per the FGD with community females.
ESS 5: Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement			
Land Acquisition	Moderate	Low	A total area of 23.86 acres will be proposed in phase-1 for Burimari Land Port. Only 3.51 acres will be needed for acquisition, the rest is government owned vacant land.
Economic Displacement	Moderate	Low	The effect of economic displacement is currently unknown; the sub-project will learn more about it during the RAP census survey. However, preliminary evidence indicates that the extent of economic displacement due to port areas expansion, Contractor's camp, and ancillary facilities are significant. Individuals, HHs, and businesses are likely to be economically displaced due to the loss of private property and assets (land and housing structures, including trade structures), necessitating compensation and the restoration of livelihoods. Similarly, many micro and small business owners along the sub-project AOI are likely to be economically displaced due to upgrading. Compensation will be paid to both title and non-title holders.
Physical Displacement	Moderate	Low	Expansion of the proposed area of Burimari Land Port will necessitate land acquisition and the physical displacement of title and non-title holders. Transect walks and socioeconomic surveys along the proposed alignment revealed the presence of some structures such as some households, mosques, graveyards, tea stalls, etc. As most of the west side of the proposed sub-project is barren/khas land, no acquisition is needed. The land requirements will be met by purchasing a few private lands on the east side of the port. Impacts on land and assets resulting from pre-construction activities will need to be addressed and mitigated through a combination of compensation, assistance, and relocation arrangements. A site-specific Resettlement Action Plan (RAP) will be developed for this purpose, which will include details on such mitigation provisions.
ESS 7: Indigenous Peoples			

ESF Standards, Environmental and Social Risks, and impacts	Risk Rating		Rationale
	Construction stage	Operation stage	
Free Prior and Informed Consent (FPIC)	Low	Low	The sub-project will not affect indigenous peoples, traditional culture, land resources, or territories. It is not necessary to use the FPIC process.
ESS 8: Cultural Heritage			
Tangible Heritage	Low	Low	No impact is expected based on the preliminary socio-economic survey at the proposed area. The current project boundaries may impact some mosques/madrasas.
Intangible Heritage	Low	Low	No impact is expected based on the socioeconomic survey.
ESS 10: Stakeholder Engagement and Information Disclosure			
Continues engagement of stakeholders during implementation	Moderate	Low	There is little understanding of the sub-project and the land acquisition process, Compensation for impacted land, affected private and public structures, and public structure construction.
Issues Related to the project	Moderate	Low	Risks of migrant labors, SEA/SH/GBV, the establishment of GRM, hiring of local labor, community health and safety, pay parity between men and women. A stand-alone SEP has been prepared, outlining the details of the plan and the disclosure options.

7.4 Anticipated Potential Impact Related to ESS

7.4.1 Impacts Related to Assessment and Management of E&S risk and impact (ESS 1)

174. The proposed sub-project activities at Burimari are anticipated to have substantial environmental and social risks with no significant residual environmental or social risks. These risks need to be managed by the PIU, which has some existing capacities for managing environmental and social risks, but these need to be further developed. Also, the Contractor's capacity (s) will need to be carefully assessed before awarding the tender(s). The ESMP provided in this ESIA will need to be adapted after the Contractor is assigned to develop the Contractor's ESMP (C-ESMP). Although no associated facilities are identified at this stage, after the Feasibility Study is completed, the updating/finalizing of the ESIA should again consider if associated facilities have developed in the intervening period. Land acquisition will lead to physical and economic displacement at the individual, HH, and community levels. The impact of land acquisition, on the other hand, will be disproportionately felt by vulnerable and disadvantaged groups. The sub-project will categorize vulnerable groups as having a household income of less than or equal to BDT 19,000, (ii) having a disability, (iii) being a widow, and (iv) being a senior citizen (age greater than 60).

175. Based on consultations with BLPA and other stakeholders, there are no contemporaneous activities proposed in relation to this sub-project. Therefore, the environmental and social assessment has determined that there are no associated facilities for this proposed sub-project, so these issues are not considered. Due to land acquisition and civil works, vulnerable groups may lose jobs and other sources of income, land and homesteads, and social networks with the larger community on which they may rely. The ESMP and as well the site specific RAP which will be prepared later, devise to minimize or mitigate the impacts faced by vulnerable groups which, at the very least, will look to ensure that they are as well off as they were before.

176. Vulnerable groups also include the land owner and businesses, including those engaged with transport business and other small business who will closed due to land acquisition. The locals' needs and concerns, including disadvantaged groups like physically challenged individuals, were incorporated. There are currently no major projects underway in the Burimari Land Port, and the cumulative impact of the sub-project is most likely to be felt during the construction stage. Positive cumulative impacts, on the other hand, are expected to outweigh any cumulative negative impacts, as the region is expected to be economically transformed once the project is completed.

7.4.2 Impacts Related to Labor and Working Conditions (ESS 2)

177. BLPA will appoint Contractors to carry out civil works, to support core functions, primary suppliers of material/equipment, and as well as for other implementation support. Construction work will necessitate the use of labor and associated goods and services. Construction Contractors are expected to set up construction campsites, material stockyards, and workforce camps at suitable and pre-determined /approved locations along the respective road corridors and nearby locations. The workforce camps will provide housing for both skilled and unskilled laborers. Few women are involved in trading and other entrepreneurial activities. They run small shops and small businesses. Furthermore, the influx of labor during construction phase may also affect the sub-project area on public infrastructures such as health services, utilities such as water and electricity, housing, and social dynamics. Other related issues could include an increased risk of communicable disease spread and an increase in illicit behavior and crime.

178. Before the project appraisal, a Labor Management Procedure (LMP) has been prepared and this will be included in the Project Bidding Document. Following the hiring of the Contractor, but before the commencement of Civil Works, the Contractor will be required to prepare the Contractor's ESMP, OHS plan, Water and Waste Management Plan, Labor Management Plan, Worker’s camp management Plan, Traffic and Road Safety Management Plan, the establishment of GRM for labor, and Site Restoration Plan, among others, following the GoB and ESS2 of WB. Before the start of construction, the PIU will review and approve all such plans prepared by the Contractor.

179. **The project shall comprise the following types of workers:**

a. ***Direct workers:*** Direct workers will include the project managers and supervisors, who are hired by the BLPA and deployed for the ACCESS MPA program. The estimated number of direct workers will be decided as per existing institutional arrangements and practices of BLPA.

b. ***Contracted workers:*** All workforce deployed by the Contractors and the Project Management Consultant (for all packages) will be considered contracted employees. The Contractor(s) may also hire multiple sub-contractors and all employees of such sub-contractors will be considered contracted workers as well.

c. ***Primary supplier workers:*** There will be primary supply workers such as those providing aggregates and raw materials for the construction site.

180. **Occupational Health and Safety (OHS) Plan** will be prepared and implemented by each Contractor based on the ESS 2, WBG EHS Guidelines (1997), ESCoPs, mitigation plan, and other relevant GoB laws, rules and policies. The Plan will be submitted for review and approval to BLPA before Contractor mobilization. The OHS measures outlined in the Labor Management Procedures will be implemented by PIU.

181. **Potential labor risks:** The potential risks are associated with workers/laborers engaged in construction works.

i. Safety issues while at work like injuries/accidents/ fatalities leading to even death, while at work;
ii. Short terms effects due to exposure to dust and noise levels while at work
iii. Long term effects on life due to exposure to chemical /hazardous wastes
iv. Inadequate accommodation facilities at workforce camps, including inadequate sanitation and health facilities
v. Non-payment of wages by Employer
vi. Non-payment of benefits (compensation, bonus, maternity benefits, etc.) by Employer
vii. Discrimination in Employment (e.g., abrupt termination of the employment, working conditions, wages or benefits, etc.)
viii. Engagement of child labor
ix. Sexual harassment at work
x. Forced labor trafficking
xi. Security of women workforce
xii. Inadequate facilities for pregnant women and lactating mothers
xiii. Inadequate facilities for the children of the workforce at workforce campsites
xiv. Absence or inadequate or inaccessible emergency response system for the rescue of labor/workforce in situations of natural calamities like earthquake, caving in/landslides, fire outbreak, floods, cloud bursts, etc.
xv. Health risks of labor relating to HIV/AIDS and other sexually transmitted diseases
xvi. Unclear terms and conditions of employment
xvii. Discrimination and denial of equal opportunity in hiring and promotions/incentives/training opportunities
xviii. Denial for workers' rights to form workers' organizations, etc.
xix. Absence of a grievance mechanism for labor to seek redressal of their grievances/issues

7.4.3 Impacts Related to Resource Efficiency and Pollution Prevention and Management (ESS 3)

7.4.3.1 Impact on Physiography

182. Burimari Land Port has been operational for the last several years and couldn't meet the existing load as the present construction works involve only expansion of land and enhancement of present facilities of the land port. The existing port area is already a buildup, and the proposed area is mainly barren land. So, there will be no significant impact on the region's physiography due to this project.

7.4.3.2 Impact on Geology

183. Different materials, such as earth, aggregate, boulders, and sand that occur naturally and whose formation process is slow and takes years, will be required for the construction work. Furthermore, development has put a strain on these finite natural resources, posing a recent availability challenge. Taking these factors into account and minimizing the impact of construction on natural resources is a fundamental design principle for pavement and structures. There is no impact on geology during construction as the proposed project area is geomorphologically stable.

7.4.3.3 Impact on Soil

184. During the construction phase, topsoil stripping up to a depth of 15cm is expected to be directly influenced by clearing and grubbing. Compaction of soil caused by traffic, stockpiles, and temporary facilities is also likely to impact soil structure, affecting organism activity, water retention capacity, and nutrient retention. The soil characteristics of the native soil may also be changed due to the import of soil for filling and leveling purposes. It is envisaged that the filling activity may impact the native soil due to spillages during transportation of soil and run-off during filling and compaction.

185. There's also the risk of soil contamination from fuel and chemical leaks and spills during handling and storage. Removing topsoil, compaction, and chemical spillage will directly impact the land within the sub-project intervention area. Compaction of soil caused by traffic, stockpiles, and temporary facilities is also likely to have little impact on soil structure, affecting organism activity, water retention capacity, and nutrient retention. After the development of the project, the impact will be neutralized.

7.4.3.4 Impact on Water Resources

186. There is a river beside the sub-project intervention area named 'Dharala.' This river is non-tidal and contains many stone boulders. The proposed alignment is just 100m away from the river. Construction activities will not pose any disturbance to the river. Since this will be a temporary phenomenon in the construction period, no adverse impact is anticipated.

7.4.3.5 Impact on Physical Environment

7.4.3.5.1 Ambient Air Quality

187. The sub-project area's existing baseline conditions show that air quality parameters (PM10, PM2.5, SO_2, NO_2, and CO) are not within the prescribed standards of the DoE. The main reasons are that there are so many stone crushing machines running throughout the sub-project influence area. Major imported item is stone, boulder, limestone. This can be attributed to dust pollution. The high volume of traffic is also responsible for this. Under particular circumstances, construction activities can give rise to dust emissions if not effectively managed. The air quality impact will be moderate to substantial during construction activities, but the impact will be reduced during operation. Construction activities can affect receptors near the main construction sites due to dust generated from site preparation, site excavation, and construction activities.

188. Earthworks will result in exposed soil areas that will generate dust when it is windy, with dust potentially being generated when winds blow at all times of day or night, not just during active

construction periods. The level and distribution of dust emissions will vary according to the duration and location of the activity, weather conditions, and the effectiveness of suppression measures. Generally, additional vehicle movements generated during the construction phase will potentially influence local air quality at sensitive receptors located close to project AOI, and pollutant concentration is likely to reduce when the expanded area's operational activity begins. In the operational phase, air emission causes only by vehicular movement though the concentration of pollutants will be lower than the construction period. Furthermore, if we consider the sub-project AOI, air pollutants may be dispersed from Bangladesh to India during the construction period. These factors have a transboundary impact; however, it is marginal.

7.4.3.5.2 Noise & Vibration

189. The existing port area is generated excessive noise and vibration due to high traffic load—inadequate facilities like unpaved roads, and other reasons. The principal noise source would be equipment, machinery, and vehicles during the construction activities. Earthmoving machinery, e.g., excavators, graders, and vibratory rollers, may generate a noise level of more than 70 dB (A). The vibration produced by rollers can be transmitted along the ground. In Burimari, the central part of the proposed area is vacant land, and there are no kutcha structures located along the project intervention area, so there will be no possibility of damages. The noise levels may rise during the operation phase due to vehicular movement. This will be limited to the adjacent area, and its significance is low.

7.4.4 Impacts Related to Community Health and Safety (ESS 4)

7.4.4.1 Infrastructure and Services

190. There will be increased demand for electricity, water, and health facilities during the construction phase. The exact nature of these demands is unknown at this time, but Contractors are expected to use both the electricity grid and on-site generators. If the influx of workers and the nature of the civil works cause stress on existing infrastructure and natural resources such as water, conflict with the local communities may arise.

7.4.4.2 Transport, Accessibility, and Health

191. Creating temporary access to the Contractor's camps/establishments may be required during the construction stage (depending on camp location). Due to the project interventions, increased traffic along with the sub-project areas and transport routes will also expose communities to health and safety risks for a specific time. To address these issues, a traffic management plan would be necessary. In particular, the community may be exposed to increased construction-related traffic and equipment. Furthermore, dust from earthworks, noise, and increased emissions from traffic congestion and vehicle idling may become common in sub-project areas.

7.4.4.3 Hazardous and non-hazardous wastes

192. During the pre-construction period, solid waste from site clearing will be generated. The sub-project will generate some solid non-hazardous, and hazardous wastes during the construction phase. Excavated material, construction material, Municipal Solid Waste, and wastewaters are among the non-hazardous wastes expected. Examples are used oil, empty drums or replaced parts of construction machinery, used batteries, concrete admixture, and other hazardous waste. The handling, storage, and disposal of waste, both on and off-site, may pose several risks to human health and the environment. Incorrect handling and storage could lead to cross-contamination of air, soil, and water resources and direct and indirect health effects. There will be less possibility of generating hazardous waste for this proposed project intervention. Uncontrolled disposal and inadequate waste management during construction. The operation of construction worker camps may result in environmental pollution from organic and non-organic waste generated by project activities. Some solid non-hazardous waste may be generated from labor camps and sheds, but these will not impact the community.

7.4.4.4 Natural Hazard and Vulnerability

193. The impact due to the construction of this project does not significantly alter the vulnerability status of the region as a whole. The site investigation observed and identified the risk of natural disasters like earthquakes. Such events would have potential health and safety hazards to personal or workforce or labor or community in the vicinity and may get stranded at operational sites.

6.1.7.5 Sexual Exploitation and Abuse (SEA)/ Sexual Harassment (SH)

194. A consolidated Gender Action Plan (GAP) and SEA/SH Management Plan is prepared for the project, which will provide the relevant mitigation measures and risk management procedures for BLPA. The SEA/SH Plan will include a Code of Conduct (CoC) for all the workers in the project. The CoC will be included in the bidding documents, and the Contractor(s) deployed for construction and supervision-related activities of the project will have an obligation to comply with provisions for all its workers. Finally, a SEA/SH compliant GRM will be set up by BLPA to resolve any potential SEA/SH-related grievance cases.

7.4.5 Impact related to Land & Assets (ESS 5)

195. The proposed land port site will require acquisition of 3.51 acres of private land. Landowners, who already earn a good amount by renting them, suggested providing better compensation and job opportunities to avail of this loss. Land acquisition will lead to loss of land for both title and non-titleholders and cause disruption in income and livelihood streams for individuals and groups of people.

7.4.6 Impacts Related to Bio-diversity & Living Natural Resources (ESS 6)

196. The site clearance activities for construction will involve removing vegetation and felling trees. The baseline survey results indicate that the sub-project influence area is less diverse due to human intervention. The ecological investigations have indicated no rare, endangered, and threatened species in the sub-project influence area, and there are no environmentally-sensitive areas. No indication of forestation is observed around the sub-project area. Thus, impacts on forests ecosystems are not anticipated. There is no National Park or wildlife sanctuary within 10km from the project influence area or any habitats of known biodiversity within the sub-project area.

7.4.7 Impacts Related to Tribal/Indigenous Population (ESS 7)

197. The surveys indicated no tribal or indigenous people within the project influence area.

7.4.8 Impact Related on Impacts on Cultural Heritage (ESS 8)

198. The alignment of the sub-project road does not have any ancient monuments and the archaeological site(s); Thus, no impacts are foreseen on ancient monuments and archaeological sites due to the construction of the ACCESS project. However, the impact assessment survey has identified a few mosques and graves in the sub-project-influenced area. In addition, a chance find procedure will be included in the bid documents which the contractor will need to comply.

7.4.9 Impacts Related to Financial-Intermediaries (ESS 9)

199. Not relevant as there is no financial intermediary involved.

7.4.10 Impacts Related to Stakeholder-Engagement-and-Information-Disclosure (ESS 10)

200. In this project, a wide categories of stakeholders will be engaged during the project cycle. A standalone stakeholder engagement plan is prepared and disclosed which identifies the different categories of stakeholders, details the relevant methods and approaches of engagement including a

grievance management setup, mechanisms for receiving feedbacks from the stakeholders and closing the feedback loops.

Chapter 8. Mitigation Measures

8.1 General

8.1.1 Mitigation Measures for Environmental & Social Risks

201. Primary sources of these adverse/negative impacts can be categorized into three types: (a) location of port; (b) construction; and (c) port operation, traffic and land transport. Location of port connotes the existence of structures or landfills and the position of the development site. Construction implies building infrastructures, land filling, improving drainage system, waste management system and transport of construction materials. Port operation includes traffic, discharges and emissions, spills and leakage; and traffic-related factors such as vehicle handling and storage, handling equipment, hazardous materials, and land transport to and from the port.

202. The vulnerable groups' concerns and needs will be addressed through a combination of measures, including additional assistance. Impacts on such vulnerable people will be mitigated through provisions and measures in the Resettlement Action Plan. Furthermore, as stated in the Environmental and Social Management Plan (ESMP), other location-specific measures will be devised during the design and construction stages, such as universal access to facilitate movement for physically challenged. Congestion would worsen, and the economic cost of traffic jams would almost certainly have a negative externality on the local economy. In the absence of the project, the overall quality of the environment and social conditions along the project area would deteriorate. Undertaking this project, road conditions will improve, port facilities will be increased, congestion of traffic will be reduced.

203. Under this project and in accordance with the ESF, Project shall define vulnerable person includes Children, people with disabilities and persons above the age of 65 years irrespective of their physical status. Needs and concerns of the local people including the disadvantaged group like people with disabilities will be considered with provisions of universal access (ramp) with railing and other facilities. These concerns and needs of vulnerable groups will be addressed through a mix of measures that includes additional assistances. Mitigation of impacts on such vulnerable persons will be undertaken through provisions and measures given in the ESMP.

8.1.2 Mitigation Measures for Labour Risk and Susceptible Working Conditions

204. A Labor Management Procedures (LMP) has been prepared for the Phase 1 program which also includes BLPA. The key provisions of the LMP, such as workers' Code of Conduct, labor GRM, will be including in the bid documents. The LMP is intended to integrate the GoB's environmental, social, occupational health, and safety principles and the requirements outlined in ESS 2 of the World Bank through this guideline and associated standard operating procedures. It will defines the requirements for providing employment terms and conditions, promoting non-discrimination and equal opportunity, and organizing workers.

205. The Civil Works Contractor's contractual obligations to manage these negative impacts would be clearly stated, with appropriate mechanisms in place to address non-compliance in the bid documents. Further the bid documents will include also th environmental, social, health, and safety (ESHS) requirements, such as a list of applicable labor laws and provisions and metrics for Contractor reporting regularly.

206. To address labor influx, the Contractor will:

- Reduce labor influx into the sub-project area, source all unskilled labor from within the sub-project area and its vicinity. If unavailable locally, skilled labor would be brought in from outside the sub-project area, either within or outside the district.
- Develop a Workers' Camp Management Plan that addresses specific aspects of the establishment and operation of workers' camps, such as separating labor camps and material storage areas;

- Conduct awareness campaigns on HIV/AIDS, STDs, COVID-19, and other communicable diseases.
- Create a system for handling labor-related complaints at the project level.
- Provide information about the Contractor's policies and Worker Code of Conduct to the communities in the sub-project area host communities.
- The BLPA prepared a GAP and SEA/SH Plan. This should cover awareness-raising, especially among workers and staff, disseminating information to the populace, and a specific GRM procedure for SEA/SH which will be circulated among the communities and local stakeholders.

8.1.3 Mitigation Measures for Community Health & Safety

207. During the construction phase, dust will generate from the access roads and port facilities. Rain water discharge from material stored in open stack yards, such as coal, may carry soot particles and contaminate the surface waters of nearby streams. Leakage and spillage of cargo storage, including fuels, may also contaminate surface water. The laborers and the people living around the developing project will be exposed to additional health risks in the construction phase. People are aware of Community Health and Safety (CHS). Community members are concerned about their health and safety. For extra precautionary measures, water spraying for noise level control is undertaken. Traffic rules are strictly maintained in front of schools and colleges. Spreading awareness of HIV-AIDS/STDs among LPA/ LGIs/ Other stakeholders/ common people is ensured. Safety-level (e.g., fire/ earthquake) at LPA offices/ container storage/ other facilities are provided.

208. To mitigate potential impacts to the health and safety of villagers, the Contractor will be required to develop a community health and safety risk assessment and plan (specific attention will be given to Covid-19 risks and mitigations) for approval before construction works that incorporate good international practices and recognized standards such as emergency response and preparedness procedures, communication systems and protocols to report any emergency, including interaction with the commune and provincial emergency and health authorities.

209. The risk assessment should be undertaken through a facilitated risk assessment workshop involving the Contractor, BLPA, and PIU. The detailed design will incorporate community health and safety measures, e.g., such as fencing and signage. Waste management and minimizing potential impacts during construction will depend on implementing appropriate procedures, protocols, and monitoring of materials being delivered, handled, and stored before disposal. In order to ensure the safety of the workforce at operational sites and the safety of the personnel at the camp site, an Emergency Response Plan shall be prepared and followed whenever the situation warrants. BLPA also has planned to include a consulting package to recruit an NGO to develop and execute a public awareness campaign on human trafficking and SEA/SH. BLPA has also prepared a SEA/SH Action Plan along with other risk management and mitigation measures, described above under para 194.

8.1.4 Mitigation Measures for Occupational Health & Safety

210. During the COVID-19 pandemic, temperature checks are to be carried out at the worksite entrance at the start of shift, and records of all suspected and confirmed cases are to be kept. The Land Port Authority (LPA) has taken an extra precautionary step to spray and disinfect the trucks passing through the border. Temperature is checked of each person before entering the port. Require workers to observe the EHS Guideline on Construction and Demolition. Personnel must have a record of attending an appropriate course on electrical safety and working at height, and they must be adequately trained and qualified to operate on electrical equipment and at height. No compliance with PPE standards will result in disciplinary action (e.g., immediate removal from site).

8.1.5 Mitigation Measures for Pollution Prevention

Mitigation Measures for Soil Pollution

211. On the port high volume of trucks will load and unload; the Contractor will ensure trucks are loaded only to permitted capacities to prevent high emissions, vehicle wear and tear, and road surface

damage due to overloading. All haul roads, either paved or unpaved, used for transportation of materials shall be subjected to surveillance at regular intervals and rectify any surface damage till operation of the borrow area.

212. The Contractor will ensure trucks used for transporting material are covered by tarpaulin and provided tailboard so that en-route spillage and generation of fugitive dust are prevented. All haul roads (paved or unpaved) used for transporting materials shall be subjected to daily surveillance, mainly settlement/residential areas, for dust levels and regular water sprinklers to check that air quality is compliant. Trucks in good condition shall only be deployed for operations and adhere to pre-determined routes.

213. Before undertaking any site clearance and excavation activities, the Contractor shall prepare a work plan, detailing the type and numbers of equipment required, estimated volume of material to be cut or excavated, details of approved disposal sites, arrangements made for transport of excavated material to the approved disposal sites, dust suppression measures at the excavation site and along transportation routes, method of stacking and handling the excavated material at the disposal site including rehabilitation plan of the disposal site, health and safety measures and emergency response plan for the entire operation shall be prepared in advance. The construction debris from all operational areas shall be regularly scavenged and disposed of at identified disposal sites or those approved by the District administration.

Mitigation Measures for Surface water Pollution

- The Contractor shall comply with the national legislation and other regulations in Bangladesh related to water pollution control.
- The Contractor shall ensure that all existing watercourses and drains within and adjacent to (within 100m) the site are kept safe and free from any debris and any excavated materials arising from the works.
- The earthwork sites where the exposed land surface is vulnerable to runoff, etc. shall be consolidated and covered;
- All drainage facilities and erosion and sediment control structures shall be regularly inspected and maintained to ensure proper and efficient operation, particularly following rainstorms.
- Construction wastes shall be collected and re-used wherever possible. Otherwise, it should be disposed of in the small deposit area invulnerable to surface run-off, along with soil erosion prevention measures.
- The Contractor shall ensure that no tools or machinery are washed in any water source or areas that drain into an existing watercourse.
- The Contractor should not set up a labor camp beside the water bodies as wastes generated from labor camps can pollute the water.
- Dumping wastes toxic substances properly. Spillage from the vehicles will be managed accordingly.

Mitigation Measures for Groundwater Pollution

- Groundwater pumping should be from deep aquifers of more than 300 m to supply arsenic-free water. Safe and sustainable discharges are to be ascertained prior to selecting pumps.
- Tube wells will be installed regarding the surface environment, groundwater protection from surface contaminants, and aquifer cross-contamination.
- Protect groundwater supplies of adjacent lands.

Rainwater harvesting and groundwater recharge will be good approaches to reduce the risk of over extraction of groundwater. Groundwater scarcity will be reduced if this provision is included in sub-project design.

Mitigation Measures for Air/Dust Pollution

214. Emissions of dust from bulk truck handling and gasses from truck handling equipment can be sources of air pollution. Dust will generate due to construction materials (sand, aggregates, cement)

and the construction process. During the operational phase, traffic volume will be higher in the port area, which may increase dust and air pollution. Among the air pollutants, dust levels of particulate matter 2.5 and 10 are the most significant concern. To prevent and control the dust levels, the following measures are to be strictly adhered to:

- The stockpiles of construction material shall be sprinkled with water. Water should be sprayed and temporary service and access roads. After compacting, water should be sprayed on the earthwork regularly to prevent dust. Construction equipment will be maintained to a good standard, and the idling of engines discouraged. Machinery causing excessive pollution (e.g., visible clouds of smoke) will be banned from construction sites
- Air pollution monitoring shall be carried out as per the monitoring plan, and corrective action shall be taken in case of deviation.
- The Contractor shall provide a wind barrier, depending on the most prevailing wind direction and presence of sensitive receptors at the downwind side, at the perimeter of all plant sites to arrest or blow suspended particles.

At the moment, combustion of fossil fuels is mostly responsible for the carbon emissions. If modern concrete blocks are used instead of traditional bricks, the rate of brick burning is reduced, resulting in a lower carbon footprint. In sub-project design this provision shall be considered. To reduce the carbon footprint solar rooftop technology can be added in the design. Also, the subproject design should be considered in an ecofriendly manner with provision of proper ventilation system.

Mitigation Measure for Noise Pollution

215. Traffic handling equipment and road traffic are two major sources of noise and vibration, which may cause unacceptable stress levels among local people.

- Regular maintenance of the machinery, equipment, and vehicles shall be carried out to minimize the noise levels. All machinery, equipment, and vehicles shall have a definite maintenance schedule and be maintained by the Contractor.
- Night-time construction activity shall be prohibited if settlement/habitations are within 500 m of the construction site.
- Environmental measures such as noise barriers, etc., shall be constructed for the identified sensitive receptors well before commencement.

8.1.6 Mitigation Measures for Land Acquisition & Involutory Resettlement

216. Impacts on land and assets arising from pre-construction stage activities will require addressing and mitigating through a mix of compensation, assistance, and where necessary, relocation arrangements. For this purpose, a Resettlement Action Plan will be developed to provide details of such mitigation provisions. The mitigation provisions include:

a) Payment of compensation at replacement cost will be paid as per the provisions of GoB and WB ESS5;
b) Structure replacement cost will be calculated as per the Basic Schedule of Rate;
c) Each affected family shall be given a one-time "Resettlement Allowance";
d) One-time rehabilitation grant for reconstruction of affected assets;
e) One time subsistence assistance in cash for displaced families;
f) One time transportation allowance for shifting the assets for displaced families;
g) Training for skill development. This assistance includes the cost of training and financial assistance for travel/conveyance and food.;
h) One-time cash grant as vulnerability allowance; and
i) Reconstruction of community structure and common property resources will be done in consultation with the community;
j) Compensation for temporary impact.

8.1.7 Mitigation Measures for Loss of Bio-diversity and natural resources

217. For plantations, only local species that use less water and have been approved by the forest department will be used. Usually, the forest department will undertake all such afforestation and maintain it for three years as deposit work. As a result, the ESMP Budget includes a cost provision for Compensatory Plantation. To prevent the spread of invasive species, all invasive species within the impact zone and right of way must be removed/cleared and replanted with native species. The BLPA Forest Department has outlined a procedure for removing invasive species and replanting native species. The campsites and workforce camps shall be access-controlled and well-lit to avoid/prevent the entry of wild animals.

8.1.8 Mitigation Measures for Restoration of Cultural Heritage

218. No cultural heritage will be physically affected due to the construction. The ESMP will include chance find procedures, and chance find clauses will be included in work contracts with Contractors.

8.1.9 Mitigation Measures for SEA/SH

219. Human trafficking will be monitored and controlled in the operation phase as this is the third largest Land port in Bangladesh. BLPA has already efficiently implemented a retrofitted SEA/ SH action plan under an ongoing Bank-funded project.

220. Preparation and display of signage on SEA/SH prevention and zero-tolerance against SEA/SH will be displayed at the site locations and surrounding areas. BLPA has a zero-tolerance policy to SEA/SH and the related display signages/notices at the project site will include information on the SEA/SH GRM with the name(s) of the contact person and phone number, including help line numbers of police and other response actors.

221. The Worker Code of Conduct will be integral part of the employment contract along with the disciplinary measures for non-compliance (e.g., termination). In addition, workers will receive orientation of SEA/SH, CoC, and BLPA will carry out stakeholder consultation and other engagement measures to inform the community about SEA/SH risks and mitigation mechanisms. Awareness campaigns on human trafficking will be carried by BLPA/contractor(s) in collaboration/coordination with the local government institutions (LGIs) and relevant government agencies such as, police and BGB.

8.2 Environmental and Social Management Plan (ESMP)

8.2.1 General

222. This chapter outlines the framework for assessing and managing environmental and social issues in different sub-projects. It also provides necessary procedures and tools for screening and assessing environmental and social impacts. The environmental and social assessment of several sub-projects needs to be carried out based on the national laws and the relevant World Bank's Environmental and Social Standards (ESSs).

8.2.2 Objectives of the ESMP

223. An ESMP will implement environmental mitigation measures and environmental monitoring requirements. The ESMP describes the environmental impacts, environmental and social mitigation measures, environmental monitoring requirements, and environmental supervisor responsibilities. The ESMP must manage the environment by offsetting negative impacts with possible mitigation measures and enhancing positive impacts within the project's allocated funds. As a result, the following are the primary goals of the ESMP for the proposed project:

- Encourage good management practices through project planning and commitment to environmental issues.
- To provide rational and practical environmental guidelines to reduce the potential environmental impact of activities.

- Aids in the reduction of environmental disturbance (physical, biological and ecological, socioeconomic, cultural, and archeological);
- To combat all forms of pollution, monitor air, noise, land, water, waste, energy, and natural resources.
- Flora and fauna that are sensitive or endangered must be protected.
- Stop land degradation;
- Adopt best practices in waste management for all types of waste (liquid and solid), focusing on waste prevention, minimization, recycling, treatment, and disposal.
- Employees and Contractors should be trained and made aware of their environmental obligations and compliance.
- Reduce environmental risk and improve Health, Safety, and the Environment (HS&E).
- Increase efficiency by reducing consumption and conserving energy-diminishing resources.

Table 8-1:Environmental & Social Management Plan for the Proposed Project

Environmental Issues/Parameters	Environmental & Social Impacts	Mitigation Measures	Implementation Agency	Supervision Agency
(a) Pre-construction Phase				
Land Acquisition and Clearance of Private Structures	▪ Land acquisition of 3.51 acres will be required for the proposed project while the remaining land is government owned and currently vacant. Land acquisition will lead to loss of land for both title and non-titleholders and cause disruption in income and livelihood streams for individuals and groups of people.	▪ Resettlement Action Plan (RAP) will be developed that will detail the related legal and administrative procedures along with compensation amount and payment process. ▪ The payment of compensation and acquisition of the private assets will be carried out in line with the RAP. ▪ Informal occupants and squatters (those who mostly live near Burimari) will be paid compensation in line with the agreed entitlement matrix along with titleholders as per the ESS5.	PIU with the support of a Resettlement NGO	BLPA
Utility & Community Property Resources	▪ Due to sub-project activities, there will be an impact on common property resources (including religious places, retaining walls, compound walls, etc.).	▪ BLPA will relocate or rebuild all community utilities and properties as per provisions listed in the RAP and ESMP. This will be carried out in consultation with the community.	Contractor	CSC/PIU
Labour Requirements	▪ The Contractor preferably will source the unskilled and where possible, semi-skilled and skilled labor from the local community to give them maximum benefit ▪ During construction period, there is a risk of engaging child labour in different tasks	▪ For works amenable to both male, female, persons with disabilities, and other workers from vulnerable groups will be given equal opportunity for employment, equal wages for equal work or standard under the project. ▪ The LMP should guide the Contractor	Contractor	CSC/PIU
Trimming of Vegetation	▪ Loss of standing crops (if any), grass and bushes in project influence area and construction campsites	▪ Provide adequate compensation to the owners on time before beginning vegetation clearing.	Contractor	CSC/PIU
Socio-economic Conditions	▪ Employment opportunities for the local people, especially for PAPs.	▪ Employ local people, specially PAPs, for the sub-project activities as much as possible.	Contractor	CSC/PIU
(b) Construction Phase				
Land and Agricultural Resources	▪ Unanticipated impacts on the property, including land and structures ▪ Loss of agricultural land causes a temporary disruption of farming activities damage crops, bunds, canals, and drains.	▪ Follow design drawings and implement careful construction practices to avoid damage to existing structures (e.g., buildings) and roads, crops, bunds, canals, and drains. ▪ Defining the work zone and preventing incursions outside the agreed-upon impact corridor.	Contractor	CSC/PIU

Environmental Issues/Parameters	Environmental & Social Impacts	Mitigation Measures	Implementation Agency	Supervision Agency
Loss of Vegetative Coverage	▪ Some vulnerable species will be affected due to tree cutting and trimming the vegetation. ▪ Loss of habitat due to tree cutting ▪ Vegetation loss due to site preparation and construction activities	▪ Make selective and careful pruning of trees where possible to reduce need of tree removal. ▪ Clear only the vegetation that needs to be cleared in accordance with the plans. These measures are applicable to both the construction areas as well as to any associated activities such as sites for stockpiles, disposal of fill and construction of diversion roads, etc. ▪ Do not burn off cleared vegetation – where feasible, chip or mulch and reuse it for the rehabilitation of affected areas, temporary access tracks or landscaping. ▪ Ensure excavation works occur progressively and re-vegetation done at the earliest time.	Contractor	CSC/PIU
Removal of Topsoil	▪ During the construction phase, topsoil stripping up to a depth of 15cm is expected to be directly influenced by clearing and grubbing. ▪ Compaction of soil caused by traffic, stockpiles, and temporary facilities is also likely to have little impact on soil structure, affecting organism activity, water retention capacity, and nutrient retention.	▪ The construction debris from all operational areas shall be regularly scavenged and disposed of at identified disposal sites or those approved by District Administration. ▪ The Contractor will ensure trucks used for transporting material are covered by tarpaulin and provided tailboard so that en-route spillage and generation of fugitive dust are prevented. ▪ Top soil will be conserved and finally landscaped.	Contractor	CSC/PIU
Impact on Surface Water	▪ Uncontrolled dumping of wastes, sewage, and dredge materials can pollute the water body. ▪ The proposed alignment is just 100 m away from the river. Construction activities may have localized and temporary impacts.	▪ The earthwork sites where the exposed land surface is vulnerable to runoff, etc., shall be consolidated and covered. ▪ All drainage facilities and erosion and sediment control structures shall be regularly inspected and maintained to ensure proper and efficient operation, particularly following rainstorms. ▪ The Contractor shall ensure that no tools or machinery are washed in any water source or areas that drain into an existing watercourse.	Contractor	CSC/PIU

Environmental Issues/Parameters	Environmental & Social Impacts	Mitigation Measures	Implementation Agency	Supervision Agency
Impact on Groundwater	▪ The availability of water to locals may be harmed by uncontrolled water extraction.	▪ Tube wells will be installed regarding the surface environment, groundwater protection from surface contaminants, and aquifer cross-contamination. ▪ Groundwater pumping should be from deep aquifers of more than 300 m to supply arsenic-free water. Safe and sustainable discharges are to be ascertained prior to selecting pumps.	Contractor	CSC/PIU
Impact on Air Quality	▪ Emissions from construction-related vehicles and machinery. ▪ Dust suspension due to frequent vehicle/trucks movement in roads & construction works. ▪ Health hazard to laborers and residents/ workers due to dust spreading.	▪ Dust generation will be restricted as much as possible, and water sprinkling should be installed appropriately, mainly where earthmoving and excavation are carried out. Emissions from construction vehicles/equipment and traffic will comply with World Bank EHS guidelines and be monitored. ▪ The dust suppression Plan will be submitted during detailed design. ▪ Watering of dusty roads; sprinkling and covering stockpiles; water will be sprayed to suppress dust on an as-required basis in the construction phase; ▪ Wet areas of dust sources to minimize discomfort to nearby residents; ▪ To reduce the Carbon footprint, concrete block will be good option than the normal traditional brick. It will reduce the carbon emissions as well as the dust pollution.	Contractor	CSC/PIU
Impact on Noise	▪ During construction on the land, noise levels produced by vehicles, machinery, concrete mixing, and other construction activities will exceed the applicable standards and may cause a nuisance to the local community. ▪ Hearing hazards to laborers and residents.	▪ Regular maintenance of the machinery, equipment, and vehicles shall be carried out to minimize the noise levels. All machinery, equipment, and vehicles shall have a definite maintenance schedule and be maintained by the Contractor. ▪ Environmental measures such as noise barriers, etc., shall be constructed for the identified sensitive receptors well before commencement.	Contractor	CSC/PIU
Occupational Health and Safety	▪ Health & safety risks of construction workers during the construction period	▪ During the COVID-19 pandemic, temperature checks are carried out at the worksite entrance at the start of shift, and records of all suspected and confirmed cases are kept. ▪ Require workers to observe the EHS Guideline on Construction and Demolition.	Contractor	CSC/PIU

Environmental Issues/Parameters	Environmental & Social Impacts	Mitigation Measures	Implementation Agency	Supervision Agency
		▪ Personnel must have a record of attending an appropriate course on electrical safety and working at height, and they must be adequately trained and qualified to operate on electrical equipment and at height. ▪ No compliance with PPE standards will result in disciplinary action (e.g., immediate removal from site). ▪ Ensure that adequate first aid equipment is available and that all workers are adequately trained to use it. ▪ Provision and inspections of firefighting equipment and fire hydrant system in all sections.		
Community Health and Safety	▪ Community health and safety include the toppling of concrete poles, traffic and accidents, the emergency spill of materials, and villagers' access to dangerous working areas.	▪ Residual water must be avoided since it might serve as a breeding ground for mosquitoes and other insects. ▪ Provide signs detailing site and office contacts in the event of a grievance during construction. ▪ Do not leave hazardous conditions (e.g., unlit open excavations without means of escape) overnight unless no access by the public can be ensured ▪ Prevent standing water as it may become a breeding habitat for mosquitoes etc. ▪ During construction, provide signage detailing site and office contacts in case of grievance.	Contractor	CSC/PIU
Waste Disposal Management	▪ The handling, storage, and disposal of waste, both on and off-site, may pose a number of risks to human health and the environment.	▪ Wastes and debris should be disposed of properly. ▪ Construction debris must be stockpiled and removed to a safe site. ▪ Do not drop or expose any debris while transporting. ▪ Minimize waste materials production by 3R (Reduce, Recycle, and Reuse) approach.	Contractor	CSC/PIU
SEA/ SH	▪ SEA/SH at work ▪ Health risks of labor relating to HIV/AIDS and other sexually transmitted diseases	▪ Integrate SEA/SH into existing IEC strategy/materials, GRM, safety talks/orientations and regular training. ▪ Training of laborers on SEA/SH issues. ▪ Enforce a Code of Conduct for all the workers/officials including the security personnel. ▪ Identify hotspots for SEA/SH within the sub-project, including construction work and labor camps alongside local communities, schools, vocational training centers, and	Contractor, NGO	CSC/PIU

Environmental Issues/Parameters	Environmental & Social Impacts	Mitigation Measures	Implementation Agency	Supervision Agency
		migrant laborers residing in rented accommodations within the villages. ▪ Awareness raising campaigns on human trafficking and SEA/SH		
(c) Operation Phase				
Air Quality	▪ Due to loading and unloading activities and Vehicle movement, dust generate. ▪ Dust generation may increase due to higher traffic volume	▪ Sweeping yards and handling areas regularly ▪ Keeping transfer equipment in good functioning order (e.g., cranes, forklifts, and trucks). ▪ Introduction of innovative technology and fuel sources that will significantly reduce GHG emissions; ▪ To sink GHG, trees should be planted in the sub-project area. ▪ Putting in place leak detection and repair programs for tanks and pipelines. ▪	E&S Cell	BLPA
Noise & Vibration	▪ Noise sources in port operations include cargo handling, vehicular traffic, and loading/unloading containers and ships.	▪ In the planning stage, consideration should also be given for developing vegetation, tree plantation, and tall boundary walls around the port facilities to reduce noise and dust levels. ▪ Alter operations schedules to avoid noise pollution during nights and weekends;	E&S Cell	BLPA
Soil and Groundwater Quality	▪ Due to storing of chemicals/ perishable organic export & import materials and another solid and liquid waste dumping – ▪ Cargo storage leakage and spillage, including fuels, waste disposal sites, and accidents. ▪ Spills of fuels may occur due to accidents (e.g., collisions, groundings, fires) and storage facilities for backup generators.	▪ Oil, grease, and chemical-handling facilities should be located with consideration of natural drainage systems; ▪ Ports should include secondary containment for above ground liquid storage tanks and tanker truck loading and unloading areas; ▪ Hazardous materials storage and handling facilities should be constructed away from active traffic and protect storage areas from vehicle accidents; ▪ Fuel dispensing equipment should be equipped with “breakaway” hose connections that provide emergency shutdown of flow should movement break the fuelling connection; ▪ Fuelling equipment should be inspected daily to ensure all components are in satisfactory condition; ▪ Installation and operation of a sewage treatment plant (STP)	Port Operator	BLPA

Environmental Issues/Parameters	Environmental & Social Impacts	Mitigation Measures	Implementation Agency	Supervision Agency
		▪ Preparation of spill prevention, control, and countermeasure plan by the BLPA. ▪ Rainwater harvesting and groundwater recharge will be good approaches for reducing risks of over extraction of groundwater. Groundwater scarcity will be reduced if this provision is included in sub-project design.		
Surface run-off	▪ Drainage clogging ▪ Contaminating water bodies	▪ The fuel storage and equipment maintenance yard should have weather/rain protection and concrete pads to prevent dripping and leaking oils from entering the water bodies via surface runoff. ▪ Wastes shall be collected and re-used wherever possible. Otherwise, it should be disposed of in the small deposit area invulnerable to surface run-off, along with soil erosion prevention measures. ▪ Avoid discharge point to sensitive environment and avoid any disruption of surface runoff to avoid drainage clogging. ▪ Particular attention shall be paid to controlling surface runoff during storm events, especially for sites located near steep slopes.	Port Operator	BLPA
Occupational Health and Safety	▪ Physical hazards associated with cargo handling and use of associated machinery and vehicles. ▪ Work with fuels may present a risk of exposure to volatile organic compounds (VOC) via inhalation or skin contact during normal use or in the case of spills. ▪ Exposure to dust from handling of dry cargo (depending on type of cargo handled, e.g. cement, grain, and stone chips) and from roads. ▪ Noise from cargo handling, including vehicular traffic, and loading/ unloading. ▪ Outbreak of any pandemic like COVID-19.	▪ Must ensure Personal Protective Equipment (PPE) for the project personnel. ▪ The Contractor must provide temporary scaffolding, temporary landslide protection walls, etc., to protect workers. ▪ First-aid boxes must be provided at each site. ▪ Workers assigned to high-level noise-generating activities will be provided with ear muffs or plugs and rotated every two hours. ▪ Use/Spray Disinfection materials every day in and outside the project area considering present COVID19.	Terminal Operator	BLPA
Traffic Congestion	▪ Traffic congestions affect workers and local people and disrupt users' routines.	▪ Implement road safety measures (such as safety signboards, flagmen, speed breakers, zebra crossings, etc.).	Port Operator	BLPA

Environmental Issues/Parameters	Environmental & Social Impacts	Mitigation Measures	Implementation Agency	Supervision Agency
		▪ Temporary crosswalks or bridgeways will be provided to ensure the safety of the workers and the public.		
Impact on the local community	▪ Risk of accidents with activities associated with cargo traffic ▪ Disturbance to local community due to maintenance works. ▪ Movement of Vehicle and loading unloading activities may possess disruption for local community. ▪ Outbreak of pandemic disease such as COVID-19.	▪ To safeguard the health and safety of construction and maintenance employees and road users, implement traffic management measures using warning signs or flag personnel. ▪ Separation of people from vehicles and making vehicle passageways one-way, to the extent practical. ▪ To minimize impacts on visual concerns of the community and improve the cleanliness of port facilities, it is required to implement regular clean up (in the port facilities and water surface) and maintenance. ▪ Restrict any unnecessary movement of local people inside the land port and avoid any unnecessary contact between workers/employees and local peoples to control any transmission of COVID-19.	Terminal Operator	BLPA

8.2.3 Environmental and Social Monitoring Plan (ESMoP)

224. The objective of environmental & Social monitoring is to compare the monitored data against the baseline condition collected during the study period to assess the effectiveness of the mitigation measures and the protection of the ambient environment based on national standards. The main objectives of the pre-construction, construction, and operation phase monitoring plans will be to:

- Monitor the actual impact of the works on physical, biological, and socioeconomic receptors within the project intervention & influence area.
- Monitor impacts of construction work on environmental & social impact of project sites and take necessary corrective measures in case monitoring results exceeds limits of specific parameters;
- Ensure compliance with legal and community obligations, including safety on construction sites.

225. Monitoring activities refer to the ESMP implementation and the impacts due to the implementation of the project. The program is selective and pragmatic, focusing on the construction-related issues for controlling and managing the environmental impacts. Monitoring points have been selected based on the sensitivity of the location concerning sensitive receptors. The schedule has been developed based on the possible occurrence of adverse impacts and required mitigation actions.

8.2.4 Monitoring Activities for the Mitigation Measures (Qualitative Aspects)

226. The proposed monitoring activities for the mitigation measures for the common impacts of the project during the construction and operation stage of the project are outlined in table 8.2.

Table 8-2: Environmental Monitoring Activities during Construction and Operation Phase (Qualitative Aspects)

No.	Environmental Impact	Means of Monitoring	Location	Frequency	Implementing Organization	Monitoring Organization
Construction Phase						
1	Dust/Air pollution	Check if proper maintenance of vehicles and equipment is ensured to reduce smoke Check availability of equipment for water in the case of dust generation areas	Every location of subproject activity Project site where construction is in progress near settlement/habitation area	Daily	Contractor	CSC/ PIU
2	Landscape/ Topography	Consultation with adjacent households and BLPA authority to get an opinion on work being completed	Along the project's intervention area	Construction stage/Monthly inspection	Contractor	CSC/ PIU
3	Ground Water quality	Turbidity and oil form	Construction sites of sub-project activity	Weekly	Contractor	CSC/ PIU
4	Surface water quality	Laboratory analysis of surface water quality against the baseline established and regulatory standards	Nearby River and Pond	Quarterly during the construction phase	Contractor	CSC/ PIU
5	Soil pollution	Odor	Construction sites of sub-project activity	Daily	Contractor	CSC/ PIU
6	Solid waste management	Check collection and storage of waste Check proper disposal of waste	Construction site and camp and designated waste disposal areas	Daily	Contractor	CSC/ PIU
7	Sanitation	Check if sanitation facilities (Connection to the septic tank and soak pits)—provision of using the mask, keeping first aid boxes, sanitation system	Construction sites of sub-project activity	Daily	Contractor	CSC/ PIU
8	Working conditions	Hard hat, safety belt, scaffolding, traffic safety	Construction sites of sub-project activity	As and when required	Contractor	CSC/ PIU
9	Health and Safety	Monitoring of health and safety of workers and number of accidents	Construction site and construction camp	As and when required	Contractor	CSC/ PIU

No.	Environmental Impact	Means of Monitoring	Location	Frequency	Implementing Organization	Monitoring Organization
10	Tree cutting	Visual inspection to ensure the removal of trees in time and avoid removing any additional trees other than the ones that have been identified	Along the sub-project intervention area	Before the site clearance	Contractor	CSC/ PIU
11	Accident	Number of accidents and near-miss encountered	Construction sites of sub-project activity	As and when required	Contractor	CSC/ PIU
12	Danger and Safety Signs	Danger and warning signs for occupational and public safety; temporary crosswalk or bridge ways	Construction sites of sub-project activity	Once a Month or when required	Contractor	CSC/ PIU
13	Housekeeping	Ensure hygiene and a healthy environment in the labor camp	Construction sites of sub-project activity	Weekly	Contractor	CSC/ PIU
14	Site clean-up and restoration of the project area	The site and surroundings of the project area will be restored and cleaned up after the completion of the construction activity	Construction sites of sub-project activity	Once prior to commissioning	Contractor	CSC/ PIU
15	Drainage Congestion	Visual Inspection	Construction sites of sub-project activity	Weekly	Contractor	CSC/ PIU
16	Community health & safety/ Grievance	Number of grievances registered and addressed	Along the project intervention area	As and when required	Contractor	CSC/ PIU
	Operation Phase					
1	Landscape/ Topography	Consultation with adjacent households and BLPA to get an opinion on work being completed	Along the project intervention area	Regular	EHS Officer of Land Port	BLPA
2	Road Accidents/ Road safety	Traffic signs, kilometer posts, speed breakers (where required) along the road, and traffic signals at road crossing have to be provided	At designated places (intersection points, cultural structures, School, hospital)	Regular	Contractor	BLPA
3	Rainwater drainage	Visual inspection	Any area inside and surrounding the sub-project area	During Rainy Season	EHS Officer of Land Port	BLPA

No.	Environmental Impact	Means of Monitoring	Location	Frequency	Implementing Organization	Monitoring Organization
4	Solid waste collection	Visual inspection that waste collection facilities are in use	From each facility of Burimari land port	Weekly	EHS Officer of Land Port	BLPA
5	Wastewater Pollution	Proper operation and maintenance of STP	From Burimari facilities	Monthly	EHS Officer of Land Port	BLPA
6	Dust/ Air Pollution	Check if proper maintenance of vehicles and equipment is ensured to reduce smoke Water spraying	In the sub-project, AOI	When required	Contractor	BLPA
7	Pollution of watercourses	Check if proper maintenance of vehicles and equipment is ensured to reduce spillage. Check dumping method of toxic substances	In the sub-project intervention area	Regular	Contractor	BLPA

8.2.5 Monitoring Activities for the Mitigation Measures (Quantitative Aspects)

227. The table below lists the quantitative aspects of monitoring in the construction and operation stages.

Table 8-3: Environmental Monitoring during Construction and Operation Stages (Quantitative Aspects)

No.	Environmental Issues	Test Parameters	Methods of Monitoring	Location	Frequency of Monitoring	Implementing Organization	Monitoring Organization
Construction Phase							
1	Air Quality	$PM_{2.5}$, PM_{10}, SOx, NOx, CO, VOC, O_3	Portable Air Quality Sampler	Three (03) locations within the sub-project boundary	Quarterly	Contractor	CSC/ PIU
2	Noise Level	dB(A)	Noise Meter	Six (06) locations through the sub-project intervention area.	Quarterly	Contractor	CSC/ PIU
3	Surface water quality	pH, TSS, TDS, Turbidity, Oil & Grease, Cl^-, Hardness, Coliform, Fe, BOD, COD	The samples were collected with Kemmerer Bottle	Two (02) major surface water bodies, including Dharala River and adjacent water bodies.	Quarterly	Contractor	CSC/ PIU

No.	Environmental Issues	Test Parameters	Methods of Monitoring	Location	Frequency of Monitoring	Implementing Organization	Monitoring Organization
Construction Phase							
4	Groundwater quality	pH, TDS, Cl, As, Mn, Fe, SO4, TC, FC	The Samples were collected through a multimeter, and the rest of the samples were tested at the laboratory	At two (02) locations within the sub-project boundaries	Quarterly	Contractor	CSC/ PIU
Operation Phase							
1	Air Quality	$PM_{2.5}$, PM_{10}, SOx, NOx, CO, VOC, O_3	Portable Air Quality Sampler	Three (03) locations within the sub-project boundary	Twice per year for operating Years	EHS Officer of respective Port	BLPA
2	Noise Level	dB(A)	Noise Meter	Six (06) locations through the sub-project intervention area.	Twice per year for operating Years	EHS Officer of respective Port	BLPA
3	Surface water quality	pH, TSS, TDS, Turbidity, Oil & Grease, Cl^-, Hardness, Coliform, Fe, BOD, COD	The samples were collected with Kemmerer Bottle	At two (02) major surface water bodies, including from Dharala River and adjacent water bodies.	Twice per year for operating Years	EHS Officer of respective Port	BLPA
4	Groundwater quality	pH, TDS, Cl, As, Mn, Fe, SO_4, TC, FC	The Samples were collected through a multimeter, and the rest of the samples were tested at the laboratory	At two (02) locations within the sub-project boundaries	Twice per year for operating Years	EHS Officer of respective Port	BLPA

8.2.6 Environmental and Social Mitigation & Monitoring Cost

228. This section describes the budget plans for the environmental management and environmental monitoring by the project proponent. Proponent will take necessary environmental mitigation measures and its expenses for the environmental management not only at the construction and operation phases but also at the closing, termination, and after termination phases in accordance with this ESIA study. The costs are approximate and will require review at the time of detailed design and estimation stage. Total cost for environmental mitigation, monitoring and training will be BDT 25,340,000 (approx. USD 300,000) in the construction phase. In the operation phase, it is estimated to be BDT 4,950,000/yr (approx. USD 60,000/yr).

8.2.6.1 Budget Plan for Environmental Management

229. Most of the mitigation measures such as, dust management, construction of labour shed, supply of pick-up van for waste management, PPE and disinfection materials for protection of present COVID-19 Pandemic and trainings, etc. are already included in the project cost. In addition, the port area is in isolated far distance from the Lalmonirhat district town and no other adequate medical facilities around the port area. In case of any critical patient in the port during construction and operation period also, the only facilities available in Rangpur Medical College Hospital, Rangpur. No other adequate transport facilities are available in Port Authority. In the point of Health and Safety issues during construction and operation period two vehicles may be considered. Main costs for mitigation measures are shown in the Table below. Detailed costs and specifications for each mitigation measure are to be calculated at the detailed design stage.

Table 8-4: Environmental impact mitigation cost during for Construction period

Sl No	Description of Item	Unit	Quantity	Unit Rate (BDT)	Item Total Cost (BDT)
1	For dust management, Movable Dust suppression equipment (spray stream, EU origin, droplet size 1mm, and noise level maximum 73dB, 360 angles rotated) with other facilities including maintenance and operation during construction period and will hand over to the project authority after completion of the work.	No	2	3,000,000.00	6,000,000.00
2	Duckweed grown in pond and Borrowpit for protection of surface water pollution.	LS			40,000.00
3	Maintenance and protection of traffic warning signs, and posting of signboard during project activities	LS			100,000.00
4	Making/ construction and maintenance temporary construction/ labor campsite with facilities including drinking water supply and sanitation facilities.	LS			500,000.00
5	Solid Waste Management including waste collection, transportation and dumping at authorized sanitary land fill site of Patgram Pourashava after minimizing of volume and recycling.	LS			200,000.00

Sl No	Description of Item	Unit	Quantity	Unit Rate (BDT)	Item Total Cost (BDT)
6	Central Sewerage Treatment Plant (STP) including liquid waste management.	No	1	6,000,000.00	6,000,000.00
7	Supply of Double Cabin Pickup van with tiptop condition with maintenance and operation during construction period and will hand over to the project authority after completion of the work.	No.	1	4,000,000.00	4,000,000.00
8	Supply of Ambulance with necessary equipment and accessories in tiptop condition with maintenance and operation during construction period and will hand over to the project authority after completion of the work.	No	1	5,000,000.00	5,000,000.00
9	First aid box for treatment of injuries in emergency situations	Nos.	Package		100,000.00
10	Personal Protective Equipment also considering present COVID-19 pandemic	LS	Package		500,000.00
11	Spray of Disinfections materials to protect present COVID-19 pandemic	LS	Package		500,000.00
12	Setup Disinfection Tunnel/ Chamber with Disinfection fog machine, etc. to protect from present COVID-19 pandemic in the entry point.	LS	2	50,000.00	100,000.00
13	Infrared thermometer.	no	10	10,000.00	100,000.00
14	Tree plantation and green area development.	LS	Package		200,000.00
15	For excess noise protection, periodical maintenance of construction vehicles and installation of sound insulation measures.	LS	Package		50,000.00
16	Water quality protection measures: soil erosion and sedimentation control at the construction site and prevention of spillages, leakages of polluting materials, etc. to be at the satisfaction of the engineer.	LS	Package		50,000.00
17	Stripping topsoil from borrowed agricultural lands, stockpiling and replacing the same to rehabilitate the land to the entire satisfaction of the owner and the engineer.	LS	Package		30,000.00
18	Rehabilitation of ancillary sites including stockpile sites, brick crushing sites, borrow areas, work force camps/ site office, and these are	Sqm	1000	100	100,000.00

Sl No	Description of Item	Unit	Quantity	Unit Rate (BDT)	Item Total Cost (BDT)
	to be the entire satisfaction of Engineer.				
Total in Tk. Two Crore Thirty-Five lac Seventy thousand only					**23,570,000.00**

Table 8-5: Estimated annual costs for Environmental Training

SL	Component	Stage	Item	Unit Cost	Quantity	Cost (in BDT)
1	Environmental Training	During Construction	Orientation Workshop and follow up training program for capacity building/ institutional development program	LS	LS	200,000.00
2	Environmental Training	During Operation	Orientation Workshop and follow up training program for capacity building/ institutional development program	LS	LS	200,000.00 /yr
3	COVID-19 pandemic	During Construction	COVID-19 pandemic awareness campaign to ensure that contractor's personnel and local community understand COVID-19 pandemic	LS	LS	100,000.00
4	COVID-19 pandemic	During Operation	COVID-19 pandemic awareness campaign	LS	LS	100,000.00/yr

8.2.6.2 Budget Plan for Environmental Monitoring

230. In terms of budget for environmental monitoring before/during construction and operation phases, main monitoring cost related with field measurements such as air, water, and noise quality. Total costs for field measurements in the construction phase by contractor and annual costs in the operation phase by the proponent are estimated, respectively, as shown in the Table below.

Table 8-6: Environmental monitoring cost During Construction period

Component	Item	Unit Cost (BDT)	Quantity (Yearly)	Total Costs (BDT)
Air Pollution (Ambient Air Quality)	Measurement of SPM, PM_{10}, NO_X, SO_2, CO, CO_2	75,000.00	4	300,000.00
Water Pollution (Surface Water surrounding river Dharla)	Measurement of pH, EC, Turbidity, DO, BOD, COD NO_3, PO_4, Oil and Grease	80,000.00	4	320,000.00
Water Pollution (Ground Water)	Measurement of pH, FC, BOD, Nitrite, Chloride, Fe, Pb, Cd, Hg, As	60,000.00	4	240,000.00
Solid and Liquid Waste Management	Site inspection at waste sensitive locations and reporting; waste water	50,000.00	6	300,000.00

Component	Item	Unit Cost (BDT)	Quantity (Yearly)	Total Costs (BDT)
	parameter (pH, Turbidity, BOD,COD,CF) test from outlet of central STP.			
Noise (Ambient Noise Quality)	Measurement of Sound level (dB) at day and night; Periodical maintenance of construction vehicles and installation of sound insulation cover	10,000.00	4	40,000.00
COVID-19 monitoring	Daily thermal checkup through Temperature Scanner	LS	LS	50,000.00
COVID-19 awareness campaign	Yearly	LS	LS	100,000.00
Reporting on Environmental Monitoring	Quarterly Monitoring Report	30,000.00	4	120,000.00
Total in Tk. Fourteen lac Seventeen thousand only				**1,470,000.00**

Table 8-7: Environmental Impact Mitigation Cost During Operation Period

Sl. No.	Description of Item	Unit	Quantity	Unit Rate (BDT)	Total Costs (BDT/Year)
1.	Maintenance of Dust Management system	LS			200,000.00
2.	O&M Cost of Duckweed grown in pond and Borrowpit for protection of surface water pollution	LS			30,000.00
3.	Maintenance of sewerage Treatment Plant (STP) including liquid waste management	LS			50,000.00
4.	First Aid Box with necessary medicine and equipment	LS			40,000.00
5.	Personal Protection Equipment (PPE) also considering present COVID-19, Pandemic	LS			80,000.00
6.	Spray of Disinfections materials to protect present COVID-19 Pandemic	LS			80,000.00
7.	Maintenance of Disinfection Tunnel/ Chamber with Disinfection fog machine, etc. to protect from COVID-19 in the entry point	LS			100,000.00
8.	Maintenance of Ambulance Driver's salary, purchase of necessary equipment and accessories, Fuel etc.	1	12	100,000.00	1,200,000.00
9.	Tree Plantation and Green Area Development	LS			200,000.00
10.	Salary of Health and Safety Officer	2	12	50,000.00	1,200,000.00
	Total in Tk. Thirty-One lac Eighty Thousand only				**3,180,000.00**

Table 8-8: Environmental monitoring cost During Operation period

Component	Item	Unit Cost (BDT)	Quantity (Yearly)	Total Costs (BDT)
Air Pollution (Ambient Air Quality)	Measurement of SPM, PM_{10}, NO_X, SO_2, CO, CO_2	75,000.00	4	300,000.00
Water Pollution (Surface Water surrounding river Dharla)	Measurement of pH, EC, Turbidity, DO, BOD, COD NO_3, PO_4, Oil and Grease	80,000.00	4	320,000.00
Water Pollution (Ground Water)	Measurement of pH, FC, BOD, Nitrite, Chloride, Fe, Pb, Cd, Hg, As	60,000.00	4	240,000.00
Solid and Liquid Waste Management	Site inspection at waste sensitive locations and reporting; waste water parameter (pH, Turbidity, BOD,COD,CF) test from outlet of central STP.	50,000.00	6	300,000.00
Noise (Ambient Noise Quality)	Measurement of Sound level (dB) at day and night; Periodical maintenance of construction vehicles and installation of sound insulation cover	10,000.00	4	40,000.00
COVID-19 monitoring	Daily thermal checkup through Temperature Scanner	LS	LS	50,000.00
COVID-19 awareness campaign	Yearly	LS	LS	100,000.00
Reporting on Environmental Monitoring	Quarterly Monitoring Report	30,000.00	4	120,000.00
Total in Tk. Fourteen lac Seventeen thousand only				**1,470,000.00**

231. Total Environmental and Social Mitigation Measure, Monitoring and Training Cost during Construction Period: 25,340,000 (approx. USD 300,000).

232. Total Environmental and Social Mitigation Measure, Monitoring and Training Cost during Operation per year Period: 4,950,000/yr (approx. USD 60,000/yr).

8.3 Grievance Redress Mechanism

233. The ACCESS MPA program will establish a Grievance Redress Mechanism (GRM) to address environmental, social, and construction-related issues and complaints from the project affected parties and other stakeholders. GRM is a paralegal tool that allows anyone aggrieved with the project activities and implementation approach relevant to environmental and social measures to raise and communicate their voice.

234. The sub-project will guarantee that grievance redress processes are in place and those procedures are monitored to ensure that grievances are addressed correctly. The PIU shall develop a system to respond to project-related questions and handle complaints, disputes, and grievances concerning any part of the project's operations, including conflicts over environmental and social impact assessment and mitigation. The following sections indicate the specifics of the institutional structures and procedures.

235. Two-tier Grievance Redress Committees (GRC) will be established for this Project.

- **Port/ Project Implementation-level:** The first tier GRM consists of the Port In-charge, a representative from the local government, and a representative from the affected communities.

The committee will consult environmental professionals when dealing with complaints about environmental issues to the CSC and E&S Cell.

- **PIU-level:** The second tier GRM consists of the Project Director, the GRM Officer of the BLPA (BLPA already has a GRM officer onboard), and a district level government representative.

236. The GRMs will follow the principle of accessibility for potential users and accountability of the contractors and implementing agencies. As such, all information related to the GRM process will be available on bulletin boards at the project site and office. Brochures with related information will be distributed during consultations and public meetings, and posters will be displayed in public places such as in government offices, project offices, village notice boards, etc.

237. A toll-free helpline will be established to receive complaints. BLPA desired to keep some of the GRC resolutions confidential as it may affect involved parties defaming their dignity. But the summary of outcomes of GRCs in periodical reports will be published on the BLPA project website without mentioning the name of complainer/ affected persons. The monitoring plan also will ensure that WB guidance/good practices are followed when handling complaints related to SEA/SH.

8.3.1 Overview and Scope

238. The sub-project will establish and follow the GRM process through the GRCs for answering queries, receiving suggestions, and addressing complaints and grievances likely to raise in the project cycle, including identification, planning, design, and implementation. The GRM spans the entire implementation period and will cater to both the beneficiary communities and the directly and indirectly affected population, including the staff, beneficiary communities, affected persons, and other stakeholders. Though the GRM proposed here a mechanism of addressing environmental and social problems identified during implementation, it will also cater to managing any disconnects that emerge from the site level, which has significant implications for the effective implementation of the project interventions.

8.3.2 Objectives of Grievance Redress Mechanism

239. The fundamental objective of GRM will be to resolve any project-related grievances locally in consultation with the aggrieved party to facilitate the smooth implementation of the social and environmental action plans. Another essential objective is to democratize the development process at the local level and to establish accountability to the affected people. However, the procedures will not a person's right to go to the courts of law pre-empt. In any working environment, both employers and employees need to be fully conversant with all aspects of disciplinary processes, grievance handling procedures, and the legal requirements and rights involved. In implementing an effective dispute management system, consideration must be given to the disputes resulting from the following:

a. Disciplinary action
b. Individual grievances
c. Collective grievances and negotiation of collective grievances
d. Gender-based violence, sexual exploitation, and workplace sexual harassment

8.3.2.1 Disciplinary Procedure

240. This is the starting point for all disciplinary action rules. These rules may be implied or explicit and, of course, will vary from workplace to workplace. Some rules are implied in the employment contract (e.g., rule against stealing from the employer). However, even implied rules should be included in the disciplinary code or schedule of offenses. In an organized workplace, these rules ideally are negotiated with the trade union and are often included in the Recognition Agreements signed by the employer and trade union. These workplace rules must be:

a. Valid or reasonable
b. Unambiguous
c. The employee is aware or could reasonably be aware of the rule or standard and
d. The procedure to be applied in the event the employee contravenes any of these rules

241. BLPA will establish a fair and effective disciplinary procedure in the workplace, which should be fair and just. The procedure is as follows: -

a. Investigate to determine whether there are grounds for a hearing to be held
b. If a hearing is to be held, the employer is to notify the employee of the allegations using a form and language that the employee can understand
c. The employee is to be given a reasonable time to prepare for the hearing and to be represented by a fellow employee or a union representative
d. The employee must be allowed to respond to the allegations, question the witnesses of the employer, and lead witnesses
e. The hearing must be held and concluded within a reasonable time and chaired by an impartial representative
f. If an employee fails to attend the hearing, the employer may proceed with the hearing in the absence of the employee

242. If an employee is dismissed, it must be given the reasons for dismissal and the right to refer the dispute concerning the fairness of the dismissal. Therefore, it is incumbent upon the Contractors to ensure that they have a disciplinary procedure and Code and standards which the employees are aware of. Each Contractor will be required to produce this procedure to ensure that employees are not mistreated.

7.4.2.2 Individual Grievance Procedure

243. Every employer, including Contractors, must have a Formal Grievance Procedure known and explained to the employee.

244. The Code recommends that such procedure should at least:

a. Specify to whom the employee should lodge the grievance
b. Refer to time frames in the Labor Management Plan to allow the grievance to be dealt with expeditiously
c. Allow the person to refer the grievance to a more senior level within the organization if it is not resolved at the lowest level
d. If a grievance is not resolved, the employee has the right to lodge a dispute with the ACCESS MPA program

245. All the Contractors who will be involved in the project will be required to produce their grievance procedure as a requirement for tender, which complies with these requirements. Besides, good international practice recommends that the procedures be transparent confidential, adhere to non-retribution practices, and include the right to representation. After they are engaged, they will be required to prove that each employee has been inducted and signed that they have been inducted on the procedure.

8.3.2.2 Collective Grievances and Disputes Resulting from the Negotiations of Collective Agreements

246. Where a trade union is recognized, it is entitled to negotiate regularly with the employer over terms and conditions existing at the workplace, and the employer is obliged to negotiate with it. The procedures followed in such instances are usually contained in the agreement, which states how the issues are raised, the procedure for negotiations, the composition of the parties involved in the negotiation, and the procedure to deal with issues that are not resolved through consensus. In the type of dispute, if the dispute is not resolved at the workplace, the parties can utilize the dispute resolutions mechanisms provided for in the labor legislation.

8.3.2.3 Sexual Exploitation and Abuse, and Sexual Harassment

247. BLPA will, with set up and run a separate GRM for sexual exploitation and abuse, and workplace sexual harassment (SEA/SH). Grievances related to SEA/SH will be reported through the SEA/SH focal point and will adhere to the strict confidentiality and in all cases, follow the survivor centric approach dealing with the victim and related grievance cases. BLPA will also seek helps from civil society

organizations (NGOs) with relevant expertise in managing any potential SEA/SH related cases. Further, BLPA with support from CSC and contractor will run awareness raising campaigns on SEA/SH. A standalone SEA/SH Action Plan is prepared for the Phase 1 program which also includes BLPA. The plan includes the related mitigation and management measures for SEA/SH including enforcement of a Code of Conduct for all the project workers and as well as SEA/SH compliant GRM.

8.3.3 Communication & Awareness Raising on GRM

248. The final processes and procedures for the GRM will be translated into the local language (i.e., Bangla) and disseminated at all project locations. These shall be made available (in both leaflet and poster format) to all project locations with the staff on-site and in Villages, Upazilla, District, and Municipality offices. The affected persons and their communities will be informed of the project's grievance mechanism in open meetings at important locations and in PAP group meetings. Bangla translations of the RPF in information brochures will be distributed among the affected persons. The PAPs will also be briefed on the scope of the GRC, the procedure for lodging grievances cases, and the grievance resolution procedure at the project level.

8.3.4 Grievance Mechanism Structure

249. The GRM will be publicized as part of the initial disclosure consultations in the participating sub-project areas. Brochures will be distributed during consultations and public meetings, and posters will be displayed in public places like government offices, project offices, village notice boards, community centers, etc. Information about the GRM will also be posted online on the BLPA's website. The Stakeholder Engagement Plan (SEP), the Labor Management Procedure (LMP), and the Gender & SEA/SH Action Plan provide details of the Project GRM, Workers GRM, and protocol for SEA/SH/GBV complaints interlinked with the Government's centralized Grievance Redress System (GRS) available online.

250. Once a grievance is registered through the standard procedure, the GRM focal person will take care of the problem. If the aggrieved party wants to escalate the issue, the port-level GRC is responsible for addressing the issue within one week (7 calendar days) from reporting the problem. If the aggrieved party is not convinced of the resolution from the site level GRC, they can take the grievance to the PIU (Project) level GRC and seek a resolution.

251. PIU-level GRC will take a maximum of 2 weeks (15 calendar days) to address any grievance they receive from site-level GRC. If PIU level GRC fails to resolve any issue, the aggrieved party has the right to take it up to the high (appellate) level at the Ministry. If the matter is not resolved there, the aggrieved person may take it to the national judicial system. However, there will be a one-stop center where all the SEA/SH/GBV related can be addressed quickly.

8.3.4.1 GRM for Dealing with Labor Issues

252. The two-tier GRM will be sensitized to receive labor related complaints so that any potential dissatisfaction, concerns, or notice can be raised by anyone employed by the contractor. This may include issues related to wages, occupational health and safety, community cohesion and labor relations. The contractor will run the labor GRM under the supervision and technical guidance of the PIUs. Detailed information on the labor GRM are provided in the project Labor Management Procedures (LMPs).

253. With its current stage, the GRM handles the grievances/complaints of project impacted individuals and other local stakeholders. However, based on lessons acquired in various project settings, there is an urgent need to develop a distinct GRM to deal specifically with those that include Contractors' personnel for site development, building, and other activities.

254. Wage rates and unpaid overtime work; irregular and partial payments; lack/inadequacy of living accommodations; lack of clean drinking water and sanitation facilities; lack of medical care in emergencies; and lack of protection against gender-based violence/sexual exploitation and abuse of female workers by labor suppliers, supervisors, and others who deal with workers are examples of such grievances.

255. The GRCs dealing with labor grievances/complaints will have members directly and indirectly associated with the construction and other works under the individual contract packages. Each GRC will have 5 members:

- Project Implementing Agency (here BLPA)) the official who is in charge of all construction and other activities at individual worksites will act as convener;
- A male worker representing the workers;
- A female worker representing the workers;
- Resident engineer of the Construction Supervision Consultant;
- A PIU official, designated by the Project Director, is not associated with the construction activities in the field but a member of the NPIU/sub-PIUs.

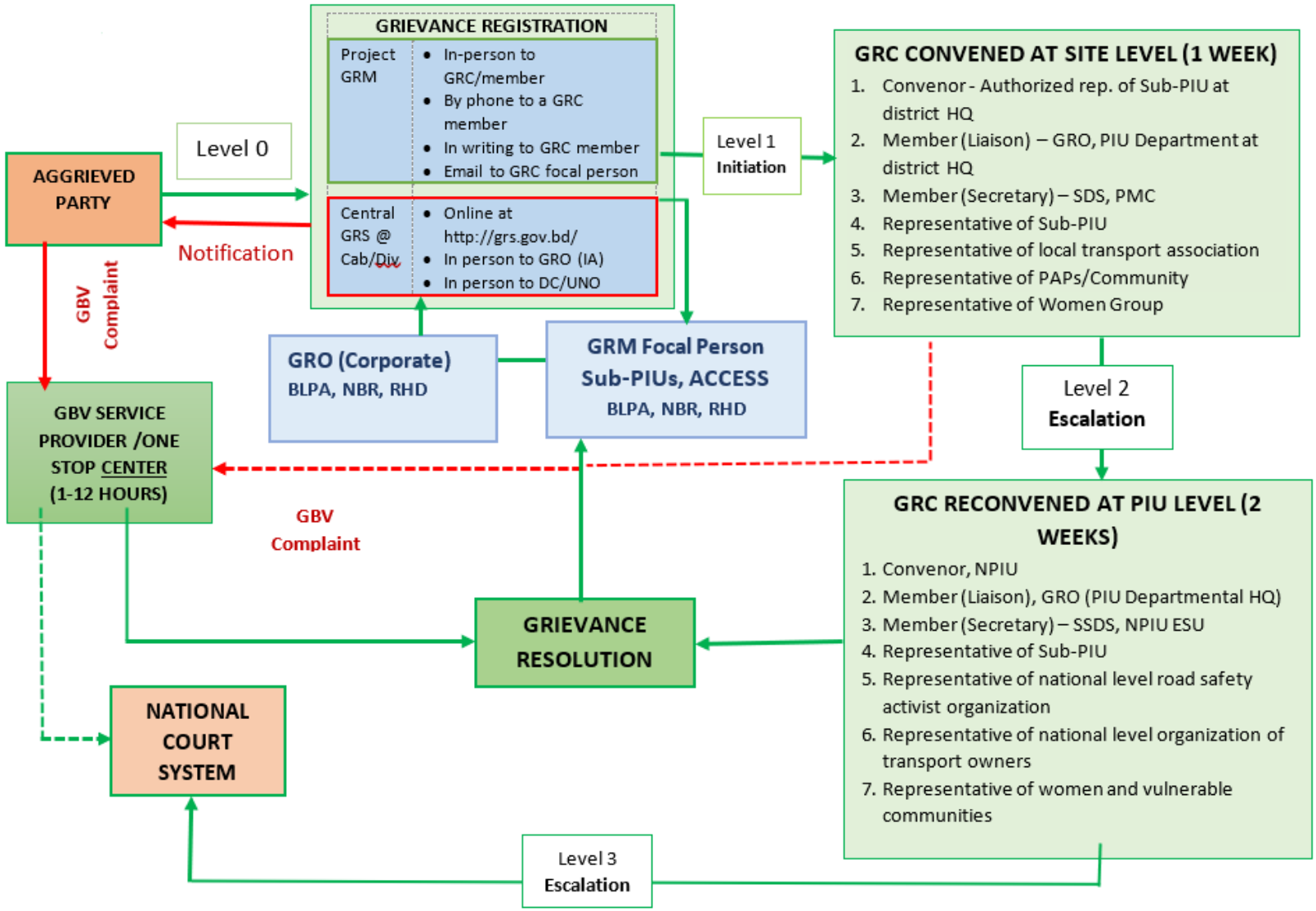


Figure 8.1: Grievance Redress Mechanism under ACCESS MPA program

8.3.5 Information Disclosure

256. The system for disseminating information should be transparent and open to all to ensure effective engagement of the community and related stakeholders. Briefing materials and the staging of community consultation meetings are two major methods used thus far. The briefing material (all to be prepared in native dialect) can take the form of (a) brochures (including project information, details of entitlements, including compensation and assistance to be given to PAPs; grievance mechanism) that can be kept in local government (Union Parishad office)/councilor's office (municipality) and project offices; (b) posters to be displayed at prominent locations; and (c) leaflets that can be distributed in the project areas. Consultation meetings should also be organized at regular intervals by the project to acquaint the communities, target group beneficiaries, and affected persons of the following:

- Timeline and progress of the project by components
- Information on beneficiary participation
- Information of involuntary displacement, compensation, and entitlements
- Information of participation of small ethnic communities
- Timeline for the acquisition of land using voluntary donation, direct purchase, and any other voluntary approach

257. In addition, for livelihood transformation, relocation of any community assets, and involuntary resettlement management, the community's opinion and consensus must be solicited. Information disclosure protocols must give citizen-centric information and relevant paperwork to resolve inquiries. The release of information will improve governance and accountability, particularly in enhancing monitoring indicators that will aid the World Bank in monitoring compliance with the agreements and assessing the impact on results.

258. The Project's results framework includes specific CE related indicators to measure the satisfaction of the beneficiaries/users and as well as share of grievances received that are processed within the stipulated service standards. Information about the GRM will also be posted online on the respective IA's website BLPA: http://www.bsbk.gov.bd/

Table 8-9: Disclosure Requirements

Topic	Documents to be Disclosed	Frequency	Where
Environmental and Social Assessment	Environmental and Social Management Framework (ESMF), Resettlement Framework (RF), Stakeholder Engagement Plan (SEP), Labor Management Procedure (LMP)	Once in the entire project cycle, but remain on the website and other disclosure locations throughout the project.	On the website of BLPA
	Environmental and Social Impact Assessment (ESIA), Initial Environmental Examination (IEE); Environmental and Social Management Plan (ESMP); Resettlement Action Plan (RAP)	After finalizing the specific location and scope, each document will be prepared and disclosed accordingly. It will remain on the website and other disclosure locations throughout the project period	On the website of BLPA; The client would make the ESA Report, ESMP, RAP available at a place accessible to displaced persons and local NGOs, in a form, manner, and language that are understandable to the stakeholders and PAPs in the following offices: • UP Office • Municipality Office/Councilor Office • Public Library if any • Project Office
	Resettlement Policy Framework translated in local language	Once in the entire project cycle.	Distributed among Project Affected Persons (PAP)
	Information regarding impacts and their	Once at the start of the project and as	Through one-to-one contact with PAPs.

Topic	Documents to be Disclosed	Frequency	Where
	entitlements in local language	and when demanded by the PAP	Community consultation List of PAPs with impacts and entitlements to be pasted in the project office and website of BLPA
	Environmental and Social Monitoring Report	Quarterly (by April 15, July 15, October 15, and January 15, every year)	Website of BLPA. Hard copy in the project office
	Contractors monthly progress report.	10th day of every month	Website of BLPA. Hard copy in the project office
	RAP Impact Assessment Report	At midterm and end of the RAP implementation	BLPA's website in the local language.
Public Consultation	Minutes of Formal Public Consultation Meetings	Within two weeks of meeting	On the website of BLPA. Hard copies in local language in the following offices: UP Office Municipality Office/Councilor Office Project Office
Grievance redressed process	Proceedings of grievance process/ monitoring reports	The continuous process throughout the project cycle.	On the website of BLPA Hard copies in local language in the following offices: UP Office Municipality Office/Councilor Office Project Office Beneficiaries and affected persons to be informed on one-to-one contact
Beneficiary identification and engagement	Approach and proceedings/long and shortlist of beneficiaries	The continuous process throughout the project cycle.	On the website of BLPA Hard copies in local language in the following offices: UP Office Municipality Office/Councilor Office Project Office Potential target group beneficiaries to be informed on one-to-one contact

Chapter 9. Institutional Arrangements

9.1 General

259. The Project Implementation Unit will lead the Project implementation (PIU) established within BLPA. The PIU will be responsible for selecting consultants for carrying out the ESIA and engineering designs for the proposed subcomponents. The PIU will be headed by the Project Director (PD). The PIU will consist of an Environment and Social (E&S) Cell with qualified staff. This E&S Cell will assist the PIU on environmental and social management issues and oversee the Construction Supervision Consultant (CSC) and Contractors. It will compile quarterly monitoring reports on EMP compliance, send them to the Project Director, and share them with the World Bank throughout the construction period. The ACCESS Program will be overseen by inter-ministerial "Project Coordination Committee" (PCC) between the 3 IAs (RHD, NBR, BLPA) and other relevant agencies. A Project Coordination Committee (PCC) normally includes the agency Heads (Chairman, Director General, or Secretary), relevant members, the Project Director and sub-project/field managers, representatives of the Economic Relations Division (ERD) under the Ministry of Finance, Planning Commission, Implementation Monitoring and Evaluation Division (IMED) of the Planning Ministry, and the parent technical ministry (Ministry of Shipping for BLPA). The PCC will be responsible for strategic discussions and decisions, inter-agency coordination, and overall project monitoring and oversight. The PCC would be expected to meet on a six-monthly basis or on an as-needed basis.

260. The E&S Cell will also train the BLPA field personnel responsible for monitoring environmental compliance during the project's construction and O&M phases. In addition, BLPA will recruit a permanent Environmental, Health, and Safety Specialist in all the proposed land ports, responsible for overseeing the environmental mitigation measures during the operation and maintenance period.

261. The overall responsibility of environmental performance, including EMP implementation of the Project, will rest with the PIU. Aside from their in-house environmental and social specialists, the PIU will engage construction supervision consultants (CSC) to supervise the Contractors, including their execution of construction-related environmental and social management requirements and measures.

262. The E&S Cell will have adequate numbers of environmental and social scientists/specialists and maintain coordination and liaison with CSC for effective ESMP implementation and ensure the use of PPE and maintaining social distancing as preventive measures of COVID-19. Similarly, the CSC will also have environmental and social monitors to supervise and monitor the Contractors for effective ESMP implementation. The Contractors, in turn, will also have HSE supervisors who will ensure EMP implementation during construction activities and will be tasked to develop necessary detailed HSE plans as per this ESMP and oversee their implementation.

263. With the assistance of the Project Manager, the Project Director will oversee the project's Environment and Social aspects. The Project Manager will guide the specialists. He will also supervise and implement the RAP provisions.

9.2 Capacity Assessment of BLPA

264. Though a capacity assessment is not conducted for the BLPA but the agency has a vast experience in implementing several large-scale projects. BLPA is already implementing World Bank-funded project as well as a number of projects funded by the ADB and other donor organizations. BLPA has its own setup and capacity to handle large land acquisition and resettlement activities and they have designated consultants and a PIU is already established. At the site, they have a designated focal point for managing grievances & responsibility for coordination of the environmental & social safeguards' implementation, with support from NGOs on the implementation of the resettlement plan and income restoration activities. Furthermore, BLPA has previously implemented resettlement plans for various projects. Despite this experience, BLPA is still considered to have the limited in-house capacity in environmental & social safeguards. This lack of in-house capacity is largely attributed to the fact that staffing of the resettlement positions consists of designated in-house officers with no formal training, and a lack of continuity due to the transfer of the officers either upon project completion or on promotion. Similarly, the delegated officers have the responsibility to bring environmental issues to the notice of senior

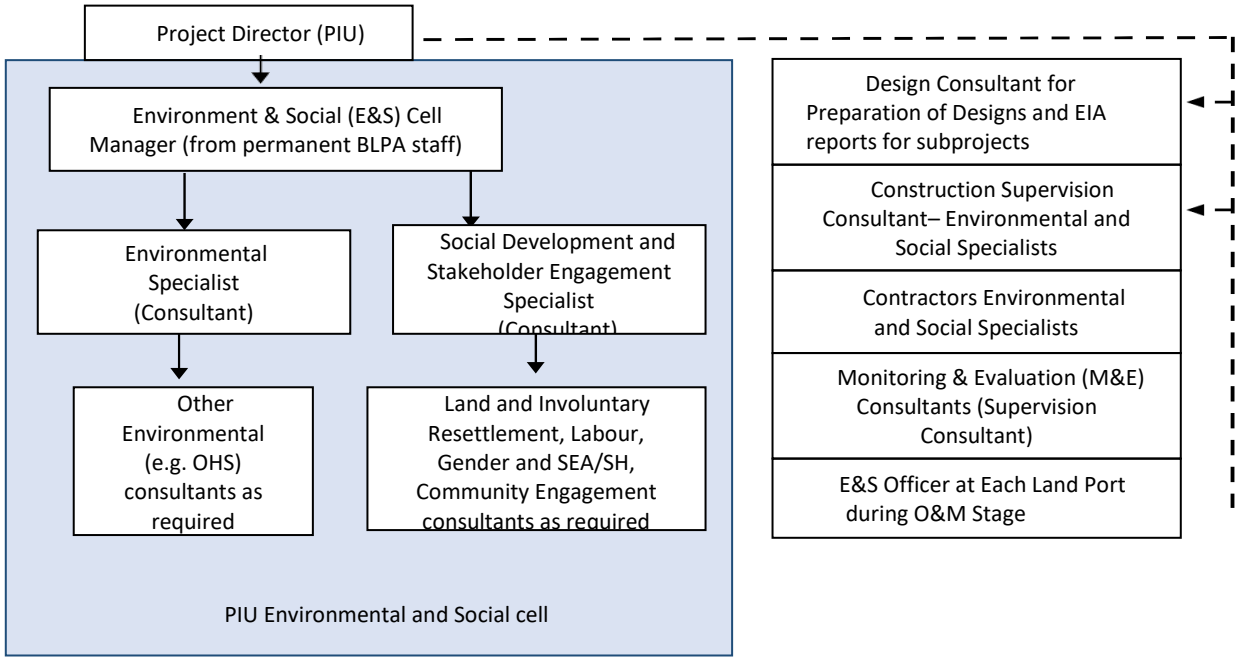
management. Typically, the delegated officers have been moved to the different regional offices due to promotions and operational needs. The status quo is that the PIU is delegated to check environmental and social assessments prepared by consultants, but they do not check the adequacy of the assessment documents. The PIU in BLPA is directly involved with project implementation but has more administrative responsibility to ensure other role along with environmental & social compliance.

9.3 Institutional Setting and Implementation Arrangement

265. BLPA will arrange for RPF/RAP implementation and monitoring mechanism. The PIU will have an Environmental and Social Cell in the PIU. At the overall project level, all RPF/RAP oversight will be ensured by BLPA. Executive Engineer of BLPA will head the Environmental and Social Cell of BLPA. One Assistant Project Director & one Project Manager are in charge of the project's Environment and Social aspects. The Supervision Consultants and Contractors will have Environmental and Social Specialists to supervise and implement the RAP provisions. M&E Consultants (here Supervision Consultant) will do regular monitoring with periodic reporting as necessary.

266. At the end of the project, an end-line evaluation will be carried out. All monitoring and evaluation reports will be shared with Bank for their feedback. The BLPA considers that they can carry out the midterm review and end-line evaluation internally and does not intend to engage any third party. After two- or three-year project execution, the third party may engage in impact evaluation. There is no need to include any budget for the midterm review or end-line evaluation, as third-party involvement is not required. The project execution period is already over at impact evaluation, and the budget cannot be included under the project.

Figure 9.1: PIU Environmental and Social Cell



9.4 Consultant Support

267. The CSC functioning under the BLPA will be directly responsible for contract administration and day-to-day project supervision, including environmental and social management. The CSC will consist of an environmental and social unit with 1 environmental expert and 1 social expert. The CSC will advise the BLPA and the PIUs on ESMP implementation and monitor the work of the contractors in the field. The consultants will also help the PIU prepare quarterly progress reports to be submitted to the BLPA, who in turn will submit semi-annual reports to the co-financier for review. The CSC will, among other things, be responsible for the following-

- Engage international/national environment specialists to ensure proper implementation of ESMP provisions;
- Undertake regular monitoring of the contractor's environmental performance, as scheduled in the ESMP;
- Conduct periodical environmental audits;
- Before construction, review and approve CESMPs/method statements prepared by the contractors;
- Supervise site environmental management system of the contractors, and provide corrective instructions;
- Monitor the implementation of the CESMP and review the environmental management and monitoring reports prepared by the contractor;
- Review and report on CESMP implementation by the contractor.

268. Overall, CSC is responsible for ensuring the proper and timely implementation of all their tasks specified in the ESMP.

9.5 Contractors

269. An ESMP has been prepared to mitigate Project's environmental and social risks and impacts. It includes mitigation measures, monitoring plan, capacity building, responsibilities, reporting system, and budget. In addition, the ESMP provides measures to address the GBV issue at the project level. The ESMP obligates the contractor, upon mobilization, to prepare the C-ESMP, which shall be approved before the commencement of construction activities. The Contractor's CESMP shall include OHS plan, Water and Waste Management Plan, Influx Management Plan, Workers Camp Management Plan, CHS Plan, Traffic Management and Road Safety Management Plan, Quarry/borrow Area Management Plan, Procedure to Compensate for Damages caused to structures while using heavy machinery, and Site Restoration Plan among others in accordance with the GoB and IFC & WB workers accommodation guidelines. All such plans will be reviewed and approved by the PIU of BLPA prior to the commencement of construction works. The approved C-ESMP shall be reviewed periodically (but not less than every six (6) months) and updated on time.

270. The contractor will be primarily responsible for preparing to implement the C-ESMP. Each Contractor will be recommended to have one Environmental Specialist, one Occupational, Health and Safety (OHS) Specialist, and one Social Specialist who will be working in close coordination with the environmental staff of CSC and PIU. The main functions of the contractor with regard to environmental and social management and monitoring are to-

- Prior to the start of construction, prepare the CESMP and other method statements and management plans according to the requirements of ESMP and get them approved by CSC
- Recruit qualified environmental and social safety officers (ESO) to ensure compliance with environmental and social contractual obligations and proper implementation of CESMP
- Provide sufficient funding and human resources for proper implementation of CESMP
- Prepare monthly reports related to environmental and social management and monitoring for review and verification by the CSC
- Prepare and implement an Environmental Management system according to the requirement specified in ESIA/ ISO 14001

9.6 Roles and Responsibilities

271. The BLPA will be responsible for the implementation of the project. The BLPA will establish a Project Implementation Unit, headed by the Project Director at the Project office, which will be responsible for the overall execution of the project. The PIU consists of the E&S Cell and an Engineering Service unit for the full implementation of the project. Other HR may be recruited as per the requirement. The E&S Cell (Table 9.1) will operate under the direct supervision of the PD. A third-party organization or consulting firm will be responsible for E&S monitoring supervised by PD through the E&S Cell. Supervision Consultant (includes environmental and social specialists) shall monitor implementation of ESMP as well

as RAP implementation for Phase 1. The roles and responsibilities of PIU and its consultants are presented in the table below.

Table 9-1: Roles and Responsibilities for ESMP Implementation

Organizations	Responsibilities
PIU	• Ensure that all project activities are well-managed and coordinated. • Procurement of works and goods. • Payment of compensation to the project affected people • Recruitment and supervision of Construction Supervision Consultants (CSC) • Recruitment and supervision of external monitor and independent Panelof Experts • Carry out an environmental assessment of sub-projects in Component 1A implementation. • Quarterly reporting on RAP implementation to BLPA. • All the actions related to ensuring compliance with RPF asdirected by BLPA and preparatory studies in Component 1C in compliance with the WorldBank and Government of Bangladesh requirements
E&S Cell	• Responsible for assisting PD with developing TORs and hiring of consultants to carry out any required environmental assessment work forsub-projects and also for preparatory studies in Component 1C,reviewing consultant deliverables related to environmental assessment, reviewing bid documents for inclusion of ESMP measures, supervising construction activities, producing periodic monitoring reports, • Ensuring inclusion of ESMP in bidding documents • Providing training on ESMP principles and requirements to CSC, Contractors, BLPA field staff, and others as needed to ensure effective implementation of ESMP • Supervising CSC for the implementation of ESMP • Closely coordinate with other concerned agencies, local governments, and communities to support the implementation of ESMP • Preparation of progress reports on the implementation of ESMP. • Ensure effective implementation of ESMP components not directly tasked to the Contractor, including components dealing with indirect, induced, and cumulative effects and operations and maintenance stage plans and measures. • Commissioning and oversight/review of consultant reports for ESIAs/ESMPs to be developed for the subcomponents of the Project • Ensure compliance of the studies on Component 1C (Component 1C: Preparation Studies and Activities to Enhance Connectivity of Land Portsand Project Implementation Support) comply with World Bank and Government of Bangladesh requirements. • Responsible for developing standard environmental code of practices during the operation stage of land ports
E&S Officer at each Land port	• Responsible for implementing standard environmental code of practices during the operation stage of land ports • Implementation of mitigation and monitoring measures during the operation stage of the land ports (monitoring of dust, traffic, solid waste collection and disposal, OHS issues, etc.)
ESIA Consultant	• Carrying out ESIA studies in compliance with the GoB and World Bank guidelines following the ESMF. • Preparing ESMP for inclusion in the bid documents.
Contractor	• Responsible for implementation of mitigation and monitoring measures proposed in the ESMP • Each Contractor will recruit an Environmental, Health, and Safety (EHS) Manager, responsible for implementing the Contractors' environmental, health and safety responsibilities and liaising with government agencies. S/he will have adequate staff to support them for these tasks.
M&E Consultant	• External Monitoring and evaluation of Resettlement Action Plan

Chapter 10. Conclusions and Recommendations

10.1 Conclusions

272. The ESIA report has been conducted in accordance with the government policies, including national legislative requirements, the World Bank Environmental and Social Framework Environmental & Social Standards, and World Bank's Environmental Health and Safety (EHS) Guidelines. As per environmental & social considerations, the overall project risk categorization for the Burimari Land Port is 'Substantial.'

273. The critical negative environmental impacts due to the project construction expected as an ESIA study outcome are land use, air quality, noise quality, water quality, solid waste generation, and disposal, increase in traffic and transport, and occupational health and safety. The economic opportunities in local employment during the construction and operation phases are positive. During the operation of the proposed project, the key issues related to the environment have been identified from the ESIA study are hazardous waste generation and management, impact local people due to industrial activity, generation of noise due to construction and operational activity, air and dust emissions due to traffic movement and construction activity and occupational health and safety.

274. The Project Implementation Unit (PIU), established under BLPA, will oversee project implementation. Trained personnel will be assigned to the PIU's Environment and Social (E&S) Cell. Throughout the construction period, this E&S Cell will assist the PIU on environmental and social management issues, oversee the Construction Supervision Consultant (CSC), supervise the Contractor(s), and compile quarterly monitoring reports on EMP compliance, which will be sent to the Project Director and shared with the World Bank. The estimated cost for the ESMP is approximate and will need to be reviewed at the time of detailed design and estimation stage. Total cost for environmental mitigation, monitoring and training will be BDT 25,340,000.00 (approx. USD 300,000) in the construction phase. In the operation phase, annual estimated cost is BDT 4,950,000/yr (approx. USD 60,000/yr).

275. BLPA has demonstrated under the ACCESS MPA Program that it can manage environmental risks and impacts satisfactorily. With training, capacity building, and specialist support, the anticipated environmental and social risks are expected to be managed.

10.2 Recommendations

276. As the proposed project area consists of a large amount of vegetation cover, it is necessary to restore the ecological balance throughout the project boundaries during the project construction period. Dharala river is situated beside the proposed project alignment, and there will be a chance to pollute the water during the construction stage. So extra precautionary measures will be needed. The proposed ESMP should be implemented strictly during the project's operation and construction phases and adequately utilize the monitoring cost. This intervention can be possible by strengthening the institutional capacity of BLPA and the Project Implementation Unit. This ESIA report should be reviewed and updated on an annual basis.

Annexures

Annex A: WB Environmental and Social Standards (ESSs)

Sl. No.	Environmental and Social Standard	URL
1	**ESS 1: Assessment and Management of Environmental and Social Risks and Impacts**	https://pubdocs.worldbank.org/en/837721522762050108/Environmental-and-Social-Framework.pdf#page=29&zoom=80
2	**ESS 2: Labor and Working Conditions**	https://pubdocs.worldbank.org/en/837721522762050108/Environmental-and-Social-Framework.pdf#page=45&zoom=80
3	**ESS 3: Resource Efficiency and Pollution Prevention and Management**	https://pubdocs.worldbank.org/en/837721522762050108/Environmental-and-Social-Framework.pdf#page=53&zoom=80
4	**ESS 4: Community Health and Safety**	https://pubdocs.worldbank.org/en/837721522762050108/Environmental-and-Social-Framework.pdf#page=59&zoom=80
5	**ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement**	https://pubdocs.worldbank.org/en/837721522762050108/Environmental-and-Social-Framework.pdf#page=67&zoom=80
6	**ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources**	https://pubdocs.worldbank.org/en/837721522762050108/Environmental-and-Social-Framework.pdf#page=81&zoom=80
7	**ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities**	https://pubdocs.worldbank.org/en/837721522762050108/Environmental-and-Social-Framework.pdf#page=89&zoom=80
8	**ESS 8: Cultural Heritage**	https://pubdocs.worldbank.org/en/837721522762050108/Environmental-and-Social-Framework.pdf#page=99&zoom=80
9	**ESS 9: Financial Intermediaries**	https://pubdocs.worldbank.org/en/837721522762050108/Environmental-and-Social-Framework.pdf#page=105&zoom=80
10	**ESS 10: Stakeholder Engagement and Information Disclosure**	https://pubdocs.worldbank.org/en/837721522762050108/Environmental-and-Social-Framework.pdf#page=111&zoom=80

Annex B: Social Questionnaire

(**Interviewers:** Describe the following part clearly to the interviewee and ask for permission before the interview.)

Consent of Respondent

With the financial support of **World Bank & Bangladesh Land Port Authority (BLPA)** we have undertaken a research work entitled **"Preparation of Environment and Social Framework (ESF) Documents for Bangladesh Bhutan India Nepal Multiphase Programmatic Approach Program".** Your community has been selected as a field for this research work. For this objective, some general information will be collected on your family. The information will only be used in the research work and without your consent; no name or identification will be used by any means. You may not get cash or any other financial support for providing this information. However, these information/data will create new knowledge. Your participation here is your choice. If you agree to participate and provide the information, then please sign below. Even after giving your consent, you can decide to stop providing information at any time. There will be no profit or loss for you for providing information or not. Do you agree to provide information?

Yes ☐ **No** ☐

[Start the interview with permission]

SL. [Official use only] ☐☐☐☐ **HHID** ☐☐-☐☐-☐☐

Date of the interview ☐☐-☐☐-☐☐ (Day / Month / Year) Starting time of the interview ☐☐-☐☐ (Hour / Minute)

Name of the interviewer ---------- Code ☐☐

Name of the supervisor ---------- Code ☐☐

Name of the interviewee (household head /elderly/ wisely person) ---------- Line No. ☐☐

Name of the household head ---------- Line No. ☐☐

Father's name of Household ----------

Village name & Code ---------- Code ☐☐

Details Address Ward ------- Union ---------- Thana/Upazilla ---------- Dist ----------

Detail ----------

Mobile Number [1] [2]

For how many years the interviewee is living in this area. (write 95 if living forever) ☐☐

Religion of the interviewee 1 = Muslim; 2 = Hindu; 3 = Buddhist; 4 = Christian; others (Specify) ☐

Race of the interviewee 1 = Bengali; 2 = *Bihari*; 3 = Indigenous; others (Specify) ☐

1

5. A. Household Members, main characteristics

1 Name all the members of the household [Please check and enlist all the names. Write the name of the household head in line number 1]
A.1.How many member are there in the household? ☐☐

Line number	Name (Write the full name in correct spelling) according to age serial after HHH	Age (Full year)	Gender	Relationship with the household head	[ ] Disability	[ ] Marital status(from the age of 10 to 10+)	(For the age of 10+) [ ]? (In the last year, If the member stayed out of home for at least 15 days for work purpose?)	(For the age of 5 to 5+) If yes, where?) (Multiple ans.)	[ ] Level of education obtained	[ ] Status of going to school)	[ ]-NGO-Participation in NGO	[ ](Does member receive any government allowance?)
		1	2	3	4	5	6	7	8	9	10	11
01.		☐☐	☐	1=HHH	☐	☐	☐	☐☐	☐☐	☐	☐	☐
02.		☐☐	☐	☐☐	☐	☐	☐	☐☐	☐☐	☐	☐	☐
03.		☐☐	☐	☐☐	☐	☐	☐	☐☐	☐☐	☐	☐	☐
04.		☐☐	☐	☐☐	☐	☐	☐	☐☐	☐☐	☐	☐	☐
05.		☐☐	☐	☐☐	☐	☐	☐	☐☐	☐☐	☐	☐	☐
06.		☐☐	☐	☐☐	☐	☐	☐	☐☐	☐☐	☐	☐	☐
07.		☐☐	☐	☐☐	☐	☐	☐	☐☐	☐☐	☐	☐	☐
08.		☐☐	☐	☐☐	☐	☐	☐	☐☐	☐☐	☐	☐	☐

2. Code of gender :
1 = Male
2 = Female
3 = Third gender

3. Relationship with the HHH :
01 = household head
02 = husband/wife
03 = son/daughter
04 = son-in-law/daughter-in-law
05 = father/mother
06 = father-in-law/mother-in-law
07 = brother/sister
08 = brother-in-law/sister-in-law
09 = other relatives
10 = grandson/granddaughter
11 = not relative
12= Sister-in-law
13= Nephew/ niece
14= Brother-in-law
Others (Specify)

4. Code of disability
1 = (yes) ; 2 =no)

6. If stayed outside of home :
1 = Yes; 2 = No

7. Code for staying outside of home :
1 = same village/area
2 = same district but different area
3 = different district
4 = big city (Dhaka/ Chittagong)
5 = other country
9 = unknown

8. Level of education obtained :
00 = no level
01 =class 1
02 = class 2
03 = class 3
04 = class 4
05 = class 5
06 = class 6
07 = class 7
08 = class 8
09 = class 9
10 = S.S.C. or equal
11 = H.S.C. or equal
12 =B.A./B.com/B.sc or equal
13=M.A/M.com/M.sc or equal
14 = Diploma/ vocational
15 = Ph.D.
55 = only religious education
88 = educated, but level of education is unknown
96= Not admitted yet
97= Not passed any class
98 = unknown

9. Status of going to school)
1= not admitted/never been to school
2= admitted and regular
3= admitted but irregular (less than 10 days in a month); 4= waiting to be admitted; 5= drop out
6= finished studying

5. Marital status :
1 = Unmarried
2 = married
3 = divorced
4 = widow/widower
5 = separated

10. Participation in NGO
1 =never been a member ;
2= former member; not involved anymore
3= involved in micro-credit;
4 =involved in social development
5= involved in ultra-poor program
Others (Specify)

11.Presently obtained government allowance
1= no allowance
2= VGF
3 =allowance for elderly
4 =allowance for widow
5 =allowance for freedom fighter
6 =allowance for disable
7= Stipend
8= allowance for deserted women
9= Maternal allowance
Others (Specify)

S.B1 House-ownership status

What is your house ownership status? (See code)	If the house is own, current value (except the land, only the house) (BDT)	If rental		(If not owned) What is your relationship with the owner?	Name of the house owner [write name in the box below]
		How is the rent paid? 1= Monthly 2= Yearly	How much?		
1	2	3	4	5	6
☐		☐		☐	

S.B1: 1. House-ownership status:
1 = Rental
2 = Own, built
3 = Own, bought
4 = Own, inherited
5 = Own, obtained from other
6 = Sheltered in others house
Others (Specify)

B1: 5. Relationship code
1 = Close relative
2 = Distant relative
3 = not related

S. B2 Built and Dwelling environment

We would like to know the details of houses/structures thar your household members use/live in.

SL.	Types of house	Materials			[ ] Length in foot	[ ] Width in foot	(INTERVIEWER) [ ] What do you think about overall status?
		Roof	Wall	Floor			
	1	2	3	4	5	6	7
House/structure- 1	☐	☐	☐	☐			☐
House/structure- 2	☐	☐	☐	☐			☐
House/structure- 3	☐	☐	☐	☐			☐
House/structure- 4	☐	☐	☐	☐			☐
House/structure- 5	☐	☐	☐	☐			☐
House/structure-6	☐	☐	☐	☐			☐
House/structure-7	☐	☐	☐	☐			☐
House/structure-8	☐	☐	☐	☐			☐

B2: 1 Type of room
1 = lining room
2 = kitchen
3 = veranda
4 = bathroom
5 = latrine
6 = shop
7 = cow shed
8 = storage
9= bathroom and latrine are joint
10= Others (Specify)

B2:2: 3: 4 Material:
1 = grass/straw/jute stick/leaf/plastic/sackcloth
2 = bamboo
3 = clay
4 = tiles
5 = brick/cement/steel
6 = wood
7 = Tin
8 = no roof/wall
9= Others (Specify)

B2:7 Overall condition):
1 = broken
2 = repair needed
3 = good

4

SL.	প্রশ্ন	Code List	কোড লিখুন
08.	**Interviewers-**Do not ask the question, observe yourself: What is the condition of tree plantation around the house??	1= Much 2=Moderate 3= Less 4= Not at all	☐
09.	**Interviewers-**Do not ask the question, observe yourself: Is there any open space for vegetable cultivation?	1= Yes 2= No	☐
10.	**Interviewers-** Do not ask the question, observe yourself : [If yes,] is there any vegetable cultivated in present?		☐
11.	For what other purposes the open space/courtyard adjacent to the house (not common) is used?:		
	1. ------ ------ ------ ------ ------ ------ ------ ------ ------ --- --- ------ --- --- --- --- ------ ------ --- --- ------ ------ ------ ------ ---- 2. ------ ------ ------ ------ ------ ------ ------ ------ ------ --- --- ------ --- --- --- --- ------ ------ --- --- ------ ------ ------ ------ ---- 3. ------ ------ ------ ------ ------ ------ ------ ------ ------ --- --- ------ --- --- --- --- ------ ------ --- --- ------ ------ ------ ------ ---- 4. ------ ------ ------ ------ ------ ------ ------ ------ ------ --- --- ------ --- --- --- --- ------ ------ --- --- ------ ------ ------ ------ ---- 5. ------ ------ ------ ------ ------ ------ ------ ------ ------ --- --- ------ --- --- --- --- ------ ------ --- --- ------ ------ ------ ------ ----		
12.	Write name of trees with number if any:		

Sl no.	**Name of trees**	**Type of trees** 1= Fruity; 2= Forest; 3=Medicinal	**Total number**
12.a			
12.b			
12.c			
12.d			
12.e			
12.f			
12.g			
12.h			
12.i			
12.j			
12.k			
12.l			
12.m			

5

5. C. Particulars of land

C.1 Does your household possess following particulars of land? [For same particular, enlist each one separately]

SL	Particular of land	[ ] yes, if the answer is no, proceed to the next one	[ ] location	[ ] Area (decimal)	Total affected land (decimal)	Mouja name of land	[ ] How did you own it?	[ ] Write the line number of owner	[ ] Present value
		1	2	3	4	5	6	7	8
01.	Own land and own cultivation								
02.	Own land, house								
03.	Own land, shop/business								
04.	Own land, pond								
05.	Own land, fallow								
06.	Own land, jungle								
07.	Own land, mortgaged								
08.	Own land, on lease/rent								
09.	Own land, on sharecropping								
10.	Own land, on charity (mosque/school)								
11.	Own land, on charity (house/cultivation)								
12.	Others (Specify)								

1. HH own any land :
1 = yes
2 = no

2. Location of the land:
1 = in this city, nearby the house
2 = in this city, away from the house
3 =in different *sadar* of this district
4 = in a village of the city
5 = in a *sadar* of different district
6 = in the *thana sadar* of different district
7 = in a village of different district
Others (Specify)

6. How did you own the land:
1 =inheritance
2 =purchase
3 = as a gift
4 = as dowry
5 = charity
6 = occupancy
Others (Specify)

6

C.2 About Sublease land/lease/Mortgage / Rental (out)

Is any of your households owned land given as sublease / lease / mortgage / rent? 1= Yes 2= No ☐ (If no go to the next section)
Code: Type of Land- 1= Sublease; 2= lease; 3= Mortgage; 4= Rental; Other (Specify)
Give details about the farmers

SL.	Name of the farmers	Type of Land	Farmer's Address	Mouja of land	Plot no. of land	The amount of land (Decimal)	Percentage of crop you get (Percent)
0	1	2	3	4	5	6	7
1							
2							
3							
4							
5							
6							
7							

C.3 About Sublease land/lease/Mortgage / Rental (In)

Did your household take someone else's owned land as sublease / lease / mortgage / rent? 1= Yes 2= No ☐ (If no go to the next section)
Code: Type of Land- 1= Sublease; 2= lease; 3= Mortgage; 4= Rental; Other (Specify)
Give details about Landowner

SL.	Name of the Landowner	Type of Land	Landowner's Address	Mouja of land	Plot no. of land	The amount of land (Decimal)	Percentage of crop you get (Percent)
0	1	2	3	4	5	6	7
1							
2							
3							

7

4							
5							
6							
7							

C.4 Fisheries -Do you have a fish farm in the proposed area? 1= Yes; 2= No ☐ [If no, go to next section]

What kind of fish is being farmed? [Fish name]	Land ownership	If Government land, do you have to pay tax?	Do you have any tax payment receipt?	Amount of tax to pay in a year	How much did you invest in last 1 year? [in BDT]	What is your average profit in a year? [in BDT]
1	2	3	4	5	6	7

1= Own land
2= Government owned
Others, Specify

1= Yes
2= No

8

S. D. HH Assets

serial no	Which of the followings do you have in your household?	Quantity (In number) [Put 0 if none]	Current value (BDT)	How did your household own it? 1 = Purchase 2 = Inherited 3 = Gift/Charity 4 = Dowry 5 = Produced
		1	2	3 (code can be multiple)
01.	Radio/CD player			,,
02.	Television			,,
03.	Electric fan			,,
04.	Fridge			,,
05.	Mobile phone			,,
06.	Cycle			,,
07.	Motor cycle			,,
08.	Sewing machine			,,
09.	Clothing rack/ Almira/ cabinet/ showcase			,,
10.	Jewelry (gold/silver) Bring in ANA			,,
11.	Rickshaw/ van			,,
12.	Cow/buffalo			,,
13.	Goat/ sheep			,,
14.	Pigeon /Duck/chicken			,,
15.	CNG/ auto rickshaw/ korimon/easy bike			,,
16.	Other property..			,,
17.	Other property..			,,
18.	Other property..			,,

9

S. E. Business Activities: Savings: Loan [put 0 if no income]

Line No	Profession? (See Code)	How much do you earn every month in average?	[ ] Without asking anyone else, how easily can you spend this money?	If there is any savings[Write in bdt]				If there is any loan taken			If there is any loan given		
				Home	Banks/ Post offices/ Insurance	NGO	To others/Small Somiti	How much	Source (see the code)	Do you pay interest?	How much money	Relation	Do you get interest?
	01	02	03	04	05	06	07	08	09	10	11	12	13
01													
02													
03													
04													
05													
06													
07													
08													

Codes for Business activities, savings and loan:

01. Profession code:
01 =Agriculturist
02 =Farmer at others cultivation
03 = Labor (construction, road repair)
04 = Fisherman
05 = Worker in industry (garments worker)
06 = Raising livestock
07 = Poultry farm
08 = Vegetable cultivation/nursery)
09 = Employee at shop/hotel
10 = Household helping hand
11 = Processing food for sale
12 =Sewing/ cottage industry/ handmade job
13 = Rickshaw puller/truck/bus driver
14 = Hawker
15 = Home business
16 = Owner of shop/hotel
17 = Business, wholesale/industry
18 = Skilled labor (carpenter/potter/blacksmith/jeweler/mechanic)
19 = Community health worker ,nurse
20 = Teacher/home tutor
21 = Professionals (doctor/engineer/lawyer)
22 = NGO (non-government/NGO employee)
23 = Government employee;
24 =Politician, ward member, chairman;
25 =Imam, priest;
26 =Beggar;
27 =Leasing/renting out land
28 =Renting out property other than land (shop/tractor);
29=Renting out cow, goat;
30= picking leftover paddy
31 =Retail seller (fish/vegetable/clothing/wood etc.)
32 =other small business)
33 = student
34 =non-resident
35 =boatmen
36 =housewife
37 =unemployed/ retired/ disable/child
Please specify, if others

03. & Spend Money
1 = easily **2** = not much easily ;**3** = Impossible; 4= Not applicable

09. Source of loan
01 =bank
02 = money lender
03 = Shopkeeper
04 = relative
05 = friend/neighbor
06 = Brac; **07** = grameen
08 = ASA; **09** = TMSS; **10** = RDRS; **11** = Proshika
12 = Buro Bangladesh;
13 = Podokkhop
14= Jagoroni
15= Shishu Niloy
16= Wave Foundation
17= Ad-din
18= Ars Bangladesh
19= Sure, **20**= Srijani
21= CSS, **22**= Somadhan

10. 13 Loan
1=yes; **2**= no

12. (Code for relationship)
1 = close relative
2 = distant relative
3= not related

S.F. Poverty status 1

SL.	Question	Code	Code List
	1	2	3
01.	What type of toilet/latrine do the household members use?	☐	1= Open field 2= Kutcha 3= Sanitary
02.	Is there any member in your household, who works as a day laborer?	☐	1= Yes 2= No
03.	Do all children of 6-17 years old of your household go to the school?	☐	1= Yes 2= No 3= Not applicable
04.	Do you have electricity in your household?	☐	1= Yes 2= No
05.	Do you have any livestock in your household?	☐	
06.	Do you have any separate kitchen in your household?	☐	
07.	What is the source of drinking water in your household?	☐	1= Supply/pipe water (in house) 2= Supply/pipe water (outside house) 3= Government tap 4= water fall 5= Tubewell 6= Pond/river/canel 7= Well Others (Specify) Multiple Ans.
08.	What is the main source of fuel in your household?	☐	1= wood 2= Charcoal 3= Leaf,straw,cow dung etc 4= Gas/Biogas/LPG 5= Kerosine 6= Electricity 7= Others (Specify)
09.	Considering your household income and food expenditure in which position, would you like to put your household?	☐	1= Food shortage, always 2= Food shortage, sometimes 3= no shortage, no surplus; 4= surplus
10.	Is there any change in the last 12 months?	☐	1= Improved 2= Deteriorated 3= Same
11.	Considering the average household income for the last 12 months how much do your household earns in a general month?	☐☐☐☐☐☐	
12.	Considering the average household expenditure for the last 12 months how much do your household spends in a general month?	☐☐☐☐☐☐	

S.G. Health:
S.G.1. Health Center:

Sl.	Question	Code	Code List
1.	In the last five years, have there been new health centers built that people from this community use, or have there been substantial improvements in existing ones?	☐	1= Yes 2= No
2.	How often is the health center open for people from this community use and working?	☐	1= every day 2= a few days a week 3= one day a week other, specify
3.	Does the community health center normally have sufficient instruments and equipment for the need of the local people?	☐	1= yes, sufficient 2= no, insufficient 3= never available
4.	Does the community health center normally have sufficient medical personnel for the need of the local people?	☐	1= yes, sufficient 2= no, insufficient 3= never available
5.	Based on your observation, what are the three most common illnesses in your community?	☐ ☐ ☐	1= Pneumonia 2= Cough/Cold 3 =Asthma 4 =Diarrhea 5. =Intestinal Worms 6= Dengue 7= Typhoid 8= Virus Fever 9= Allergy 10= Other infectious diseases 11= HIV/AIDS/STD 12= COVID-19 13= Nothing
6.	Has any member of your household been infected with Corona in the last 1 year?	☐	1= Yes 2= No

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S.G.2. Access to Health Services:

Name of Health service provider	Availability 1= Yes 2= No 3= Do not know	Distance (km)	Visiting Status 1= Yes 2= No 3= No need	Transport mode (mostly used)	Cost of transport mostly used
Community health clinic			☐	☐	
Union health complex			☐	☐	
Maternity clinic			☐	☐	
Upazila health Complex			☐	☐	
District hospital			☐	☐	
NGO run health center			☐	☐	
Private Clinic			☐	☐	
Qualified Private physician			☐	☐	
Quack			☐	☐	
Others (specify)			☐	☐	
	Transport mode: **1. On foot, 2. Bicycle, 3. Rickshaw, 4. Van, 5. Auto-rickshaw, 6. Bus, Others (specify)**				

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S.H. Eviction Threat

Sl.	Question	Code List		code
1	Is there any plan to move from present location?	1= Yes 2= No [If no, go to question no. 3]		☐
2	If yes, Why would you want to shift? (mention two main reasons)	01= flood 02= Cyclone/tornedo 03= River-erosion 04= Heavy rainfall 05= Excessive hot 06= Excessive cold 07= waterlogging 08= Earthquake 09= Mudslides/all of a sudden flood 10= dust storm 11= Firing 12= Drought 13= Lack of water during dry season 14= To live a better life comparatively	15= Quarrel or clash with others 16= Education 17= To be evicted/threat 18= Quarreling with father-mother/husband 19= High rent/increasing rent 20= For the loss of business 21= To earn 22= Illness/death of husband 23= For job/transfer 24= Influence of the powerful people 25= For the future of children 26= Moved with father-mother Others (Specify)	☐☐ ☐☐
3	Is there any eviction threat presently? ***(if code 01 go to Q4 and if 02, 03, go to Q5)***	01= Very much threatened 02= Not much threatened 03= No possibility		☐☐
4	What are the reasons of eviction threat? **(mention two main reasons and go to Q 6)**	01= Been evicted before 02= got eviction notice 03= local influential people helped to resist eviction 04= there is/are case/s going on about land 05= government may take over the land 06= the land is given to developers for new construction 07= Not sure about the future of the land Others (Specify)		☐☐ ☐☐
5.	What are the reasons of no eviction threat? (mention two main reasons)	01= never been evicted before 02= Assurance from the influential/political persons 03= Tax is paid regularly/ they have the holding number/legal papers 04= They have the legal deeds 05= There is organization/community/co-operative to resist 06= Courts stay order against eviction 07= the land is given to developers for new construction Others (Specify)		☐☐ ☐☐
6.	What do you see as the impacts/effects, if part of your land/houses is displaced by the road corridor? *(Note: multiple ans.)*	1= Income decrease 2= Land/ House/ Structure will be demolished or affected 3= Expenditure increase 4= Financial loss 5= Nothing to do		☐ ☐ ☐ ☐
7.	If you were relocated to another site, what challenges do you think you will face in the new settlement?	1= Expenditure increase 2= Difficult to get new land/ house/ shop 3= It is time consuming to buy a new land/ house/ shop		☐ ☐

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	(Note: multiple ans.)	4= Difficult to adopt with new environment/ area 5= Income decrease 6= To be affected psychologically 7= To live as tenant 8= No problem at all	☐ ☐
8.	For each challenge, what measures would you want to be put in place or implemented to help you cope? *(Note: multiple ans.)*	1= Take loan 2= Taking help from government 3= Managing money but not as loan 4= Building new house/ shop/ structure 5= Buy new land/ searching for one 6= To live as tenant 7= Taking help from relative/ neighbor/ local influential person 8= Try to adopt with new environment/ area 9= Do not know	☐ ☐ ☐ ☐

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S.I. Rehabilitation Related (If infrastructure is damaged or any risk of damage)

SL	Question			Code list					code
01.	Land ownership:			1= Own 2= Government 3= Social institute Others (specify)					☐
02.	Type of loss:			1= Partial 2= Full					☐
03.	Is there any alternatives besides the land that is on acquisitions?			1= yes 2= No					☐
4.	Types of residuary land	Location of land Mouja	Percentage	Distance (K.M)					
				0-1	1-2	2-3	3-4	4-5	5+
	1	2	3	4	5	6	7	8	9
4.1	Household								
4.2	Land								
4.3	Cultivate								
4.4	Bamboo orchard								
4.5	Orchard/Timber gardens								
4.6	Pond								
4.7	Tank/Plunge								
4.8	Uncultivated/ befalls land								
4.9	Others (Specify)								
SL	Question			Code list					code
05.	How do you expect rehabilitation to be done?			1= Self 2= Through project 3= Jointly with neighbors					☐
06.	If self-rehabilitated then where?			1= Nearby 2= To other village 3= To city Others (specify)					☐
07.	Do you expect government support for rehabilitation?			1= Yes 2= No ***(if no, go to Q 09)***					☐
08.	If yes, then how?			1. 2. 3.					
09.	What do you want as compensation?			1= In cash 2= In goods					☐
10.	What is your plan on spending the cash/money from compensation?			1= To buy land 2= To shift house/accommodation 3= To build house 4= To learn new occupation 5= To get a job 6= For business					☐ ☐

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		7= For product marketing 8= For employment opportunities 9= To repay loan Others (specify)	
11.	Mention three of your plans on a priority basis	1. 2. 3.	
12.	What do you think are the opportunities of employment for people in this area?	1. 2. 3.	
13.	Do you/ any of your household member need any training to start a new profession or increase skills?	1= Yes 2= No	☐
14.	If 'Yes', please mention name of training needed:	1= Poultry rearing 2= Cattle fattening 3=Sewing 4= Cultivate vegetable 5= Fisheries 6= Vocational (specify)_____ Others (specify)_____	☐

S.J. Involvement with govt. social safety net and agriculture subsidy program:

If any of your household member has VGD/VGF card, old age, maternal allowance or involved in kabikha or agriculture subsidy program? **1= Yes; 2= No** ☐ ***(If no, go to next section)***

1	2	3	4	5	6
line no of HHM	**Types of govt. service**	**amount**	**Duration (in month)**	**Did you get any kind of help from anyone outside the HH to receive the benefit**	**From whom**

2. **Types of govt. service code:**
1= VGD= card, 2= Old age allowance, 3= maternity allowance, 4=TR/kabikha, 5= disability allowance, 6= Widowed allowance, 7= Freedom fighter allowance, 8= Stipend, 9=VGF card 10= OMS, 11= Poriposok allowance, 12= Destitute women allowance, 13= Army welfare allowance

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5. Get help from person outside HH: 1= Yes, 2= No
6. From whom: 1=relatives, 2 = friend/neighbor, 3= chairman/member/influential person, 4 = politician, 5= NGO worker, 6= Govt. officer, other (Specify)_____

S.K. Perception on prevalent social cultural practices:

Now we will listen about relation between men and women from you. We all have our different opinions regarding this issue. Therefore, there is nothing like what is right or wrong. Please tell us, if you agree or disagree with the given statements?			
1.	Wife should have the right to express her own opinion even that does not match with husband's.	1= Strongly agree 2= Agree 3= Neutral 4= Disagree 5= Strongly disagree	☐
2.	If a wife does anything wrong, the husband has right to scold, insult threaten her.		☐
3.	If a husband misbehaves with his wife, other individual (outsider/ not family member) must interfere in the issue		☐
4.	Husband has right to thrash/ assault his wife		☐
5.	Man and Woman should have equal right for education		☐
6.	Women must be allowed to work and earn		☐
7.	Women must be allowed to go out of home whenever she wants		☐
8.	A woman must be allowed to spend her earnings by her wish		☐
9.	Only sons have the right of becoming heir to father's property		☐
10.	Wife is bound to have sexual relation with the husband even she does not want to		☐
11.	Women have the right to live at peace		☐
12.	A woman if harassed has the right to get justice		☐
13.	None has the right to harass/ torture a woman		☐
14.	Contraceptive methods should be taken by husband's decision		☐
15.	I do not have any right to divorce my husband, only husband has the right		☐
16.	If husband divorces, i have no right to get debtor?		☐

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S.L Description of Damaged Infrastructure (Homestead/Business/ Trees) For Affected Person/ Household Only

L.1 Description of Infrastructure

Sl no.	Question	Code list	Code
L.1.1	Has any infrastructure that you or your household owns been damaged by the project? ***(If 'Yes' fill the table below)***	1 = Yes 2 = No	☐
L.1.2	Is there a risk of damage to any infrastructure that you or your household owns located within the project area? ***(If 'Yes' fill the table below. If 'No', go to L.2)***		☐

Sl no.	Use of Infrastructure	Description of Infrastructure			Quantity		1= Own use/ Own business 2= Rented to another person 3= Own and rented
		Roof	Wall	Floor	Unit	Quantity/ Number	
0	1	2	3	4	5	6	7
1							
2							
3							
4							
5							
6							
7							
8							

1.Use of Infrastructure:
1= Living
2= Kitchen
3= Cow shed
4= Business
5= Boundary wall
6= Toilet
7= Tubewell
Others, (Specify)

2,3,4: Description of Infrastructure:
1= Pucca
2= Tin
3= Katcha
4= Wood/bamboo
5= Khor/ Poly (Thatched)
Others, (Specify)_____

5. Unit:
1 = SFT
2 = RFT
3 = NOS
4 = CFT

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L.2 Description of Business Organization (Only Damaged)

Sl no.	Question	Code list	Code
L.2.1	Has any Business/ Business infrastructure that you or your household owns been damaged by the project? ***(If 'Yes' fill the table below)***	1 = Yes 2 = No	☐
L.2.2	Is there a risk of damage to any Business/ Business infrastructure that you or your household owns located within the project area? ***(If 'Yes' fill the table below. If 'No', go to L.4)***		☐

Sl no.	Serial from L.1	Name of Business	Present address	Type of Business	Capital needed for the business	Yearly income from the business	Number of employee	Ownership of Infrastructure [1= Own 2= Rental]	Paid in advance (in BDT)	Monthly rent (in BDT)
0	1	2	4	5	6	7	8	9	10	11
1										
2										
3										
4										
5										

L.3 Information about workers working in affected Business/ Enterprise (Only Damaged)

Are there any workers working in the business that may be affected? ☐ 1 = Yes; 2 = No ***(If 'No', go to L.4)***

Sl no.	Serial from L.2	Name of worker	Age	Father's name	Present Address	Gender 1= Male 2= Female	Nature of duty	Monthly salary	Involvement since (in month)
0	1	2	3	4	5	6	7	8	9
1									
2									

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3									
4									
5									

L. 4 Information on rent/ lease related issues of damaged Business infrastructure/ Infrastructure (House rent/ Business purpose rent) (Only Damaged)

Sl no.	Question	Code list	Code
L.4.1	Has any of the infrastructure owned by you / your household been rented out for use by another person or organization for living/ business purpose or any other purpose been damaged by the project? ***(If 'Yes' fill the table below)***	1 = Yes 2 = No	☐
L.4.2	Is there a risk of damage of any infrastructure owned by you / your household that has been rented out for use by another person or organization for living/ business purpose or any other purpose by the project? ***(If 'Yes' fill the table below. If 'No', go to L.5)***		☐

Sl no.	Serial from L.1	Name of tenant	Father's name	Present Address	Monthly rent	Paid in advance (in BDT)	What is it used for? 1= Living 2= Business
0	1	2	3	4	5	7	8
1							
2							
3							
4							
5							
6							
7							

L.5 Information about plants (Own/social/government/others)

Sl no.	Question	Code list	Code
L.5.1	Has any of the plants that is owned by you/ your household been damaged by the project? ***(If 'Yes' fill the table below)***	1 = Yes 2 = No	☐
L.5.2	Is there a risk of damage to the plants that is owned by you/ your household by the project? ***(If 'Yes' fill the table below. If 'No', go to next section)***		☐

We would like to know detail about the damage or damage risk of plants owned by your household:

Serial no	Name of trees/plants	1= Fruity 2= Forest 3=Medicinal	Land ownership 1= own 2=government	(Types of trees & price)							
				Big/large	Price	Medium	Price	Small	Price	Seedling	Price
	01	02	03	04	05	06	07	08	09	10	11
01.											
02.											
03.											
04.											
05.											
06.											
07.											
08.											
09.											
10.											
Total number of trees											

*Big= height 16+ feet & width 30-40+ inch;
Medium= Height 11-15 feet & width 20-30 inch;
Small= height 6-10 feet & width 10-20 inch;
Seedling= height 1-5 feet & width 01-10 inch

S.M. Asset/Asset's price:

SL.	Question	Code list	Code
1.	Did you or any of you have bought any land within last 1 year?	1= Yes 2= No	☐
2.	Land buying price (excluding stamp or other expenses)		
3.	Did you or any of you have sold any land within last 1 year?	1= Yes 2= No	☐
4.	Land selling price (excluding stamp or other expenses)		
5.	What is the current price of the land types given below according to your "knowing"?		

	Land description in terms of type	Current price (per decimel)	Remarks
5.1	Home land		
5.2	Single Crop		
5.3	Double Crop		
5.4	Multi Crop		
5.5	Fruits orchard		
5.6	Pond (arable)		
5.7	Pond (uncultivable)		
5.8	Befalls land		
5.9	Commercial land		
5.10	Others (Specify)		

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S.N Crop price survey form:

SL.	Name of crop	Production per Bigha (maund)	Price of produced crop (per maund)	Total price of produced crop per Bigha
1	Bona aush (highbreed)			
2	Bona aush (local)			
3	Ropa aush (highbreed)			
4	Ropa aush (local)			
5	Bona amon (highbreed)			
6	Bona amon (local)			
7	Ropa (highbreed)			
8	Ropa(local)			
9	Boro (highbreed)			
10	Boro (local)			
11	Jute			
12	Wheat			
13	Corn			
14	Mastered			
15	Lota			
16	Pulse			
17	Kheshari			
18	Chickpeas			
19	Mung bean			
20	Pepper			
21	Onion			
22	Garlic			
23	Potatoes			
24	Sugarcane			
25	Betel			
26	Winter time vegetables			
27	Summer time vegetables			
28	Others			

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S.O Development Participation

SL.	Question	Code List	Code
1.	Do you think that the local people should be involved in different stages of any development project like BBIN MPA?	1= Yes 2= No	☐
2.	If yes, in what?	1= Planning 2= Designing 3= Implementation Others (Specify)_____	☐
3.	Are you interested to participate in any work of BBIN MPA?	1= Yes 2= No	☐
4.	What type of work you want to participate in?		

S.P General Opinion

SL.	Question	Code	Write code
1.	How many years have you been living here (community)		
2.	Are there any graves on the project influence area? *(if no, go to 5)*	1= Yes 2= No	☐
3.	If yes, how many?	☐	
4.	Mention grave location:		
5.	Are there any sites of historical importance or cultural heritage on the project influence area? *(if no, go to 6)*	1= Yes 2= No	☐
6.	If yes, please provide the names, location and use of the sites:		
7.	Do you think any conflict between any individual/ parties related or engaged into the project regarding control / domination may take place? *(if no, go to 9)*	1= Yes 2= No	☐
8.	If yes, Between whom? (see codes, multiple ans)	1. Between labor groups 2. local community leader 3. material supplier 4. contractor 5. impact community 6. female labor Others (Specify)	☐ ☐ ☐

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9.	What are the reasons of conflict? (see codes, multiple ans)	1. working environment 2. work distribution 3. wage discrimination 4. material supply Others (Specify)	☐ ☐
10.	Who do you think in the community would be mostly affected by the project?	1. Children 2. Elderly person 3. Female 4. Disable 5. Whole community 6= Transport business/ entrepreneur 7= Who has land close to the road 8= Land owner Others (Specify)	☐
11.	Who do you think in the community would be mostly benefited by the project?	1. Children 2. Elderly person 3. Female 4. Disable 5. Whole community 6= Transport business/ entrepreneur Others (Specify)	☐
12.	Is there any restriction in the project area on land use? *(if no, go to 13)*	1= Yes 2= No	☐
13.	If Yes, what are they?:		
14.	Do you think the raw materials in this project shall be used efficiently?	1= Yes 2= No 3= Don't know	☐
15.	Should there be any waste management for the used materials/ hazardous substances in the project? *(if no, go to 16)*	1= Yes 2= No 3= Don't know	☐
16.	If Yes, for waste management, what do you think should be done?:		
17.	Is there any tribal or small ethnic group in this project area? (*If no, go to 19)*	1= Yes 2= No	☐
18.	Which tribal or small ethnic group do live here? *(write their name)*:		
19.	Do you think the tribal or small ethnic group would be affected by the project?	1= Yes 2= No	☐
20.	Do you think there would be any effect of migrant labor's coming to your community/ locality? ***(Note: if no, go to 21)***	1= Yes 2= No	☐

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21.	What effects? *(Note: multiple ans.)*	1= Increase of population in the community 2= din 3= rise of living cost 4= eve-teasing 5= labor conflicts 6= furtive activity Others (specify)	☐ ☐ ☐ ☐
22.	If no, why? ***(Note: multiple ans.)***	1= The project authority monitors all labors 2= community is welcoming/ friendly 3= because of a GRC 4= Strong monitoring from the local leaders 5= project area is distant from the locality Others (specify)	☐ ☐ ☐ ☐
23.	Would the local labors be interested to be engaged in the project works? ***(Note: if no, go to 24)***	1= Yes 2= No	☐
24.	If yes, why?	1= scope of IGA 2= expertise in particular field 3= it's good to engage local people for the project 4= good payment Others (specify)	☐
25.	If no, why?	1= project recruits its own labor 2= lack of expertise 3= it's problematic to maintain local workforce 4= payment is low	☐
26.	Do you think the project would affect any local market place? ***(if no, go to 27)***	1= Yes 2= No	☐
27.	If yes, which area/ market in your knowledge do you think may get affected? ***(Note: write name of the market place/ area)***		
28.	Do you think the project would affect any school/college/madrasa?	1= Yes 2= No	☐
29.	If yes, which school/college/madrasa do you think is/ are likely to be affected? ***(Note: write name of the school/college/madrasa)***		
30.	Are there any Mosque/Temple/Church/Place of worship on the project influence area?	1= Yes 2= No	☐
31.	If Yes, mention their location:		

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32.	Are there any ponds / reservoirs located in the project area?	1= Yes 2= No	☐
33.	If Yes, mention their location:		
34.	What is the depth of the tube wells installed in your area?	1= Shallow 2= Deep	☐
35.	Are there any animals / fish / birds in your area that could be seen 10 years ago but are now rarely seen or almost non-existent?	1= Yes 2= No	☐
36.	If Yes, mention their name:		

Ending time of Interview: Hour ☐☐ Minute ☐☐

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Annex C: Environmental Quality Test

DSCL

Development Solutions Consultant Limited

Multidisciplinary Development Consultants

DSCL Environmental Laboratory

Name of the Project	**ESIA Study for the Development of Burimari Land Port under BBIN MPA Program**
Description of sample	Surface water quality
Sample Collector	Collected by DSCL Personnel
Sampling Date	13 December 2021

Surface water Quality Analysis (Onsite)

Parameters	Unit	SW_01	SW_02	Standards for Inland Surface Water** (Best fishing practice)	Analysis Method
		26.406289°N, 88.931902°E	26.404870°N, 88.927190°E		
		River Water	Pond Water		
		Dharala River	Jholmohol / Adjactent to the Burimari Zero Point Bazer		
pH*	-	11	13.5	6.5-8.5	Multimeter
Temperature	℃	23.7	24.7	20-30	Multimeter
Electricity Conductivity	µs/cm	335	420	NYS	Multimeter
Salinity		155	205		Multimeter
Disolved Oxygen (DO)	mg/l	9.3	7.7	5 or more	DO meter
Total Dissolved Solids (TDS)*	mg/l	206	285	NYS	Multimeter
Oxidation-Reduction Potential (ORP)	mg/l	- 241	-330	NYS	Multimeter

Note:
*** The Standards for Inland Surface Water have been taken from the Environmental Conservation Rules, 1997 which was amended on 19thJuly 2005 vide S.R.O. No. 220-Law/2005.*
NYS: Not Yet Standardized

Test Performed by:
Pinon Nath
Jr. Environmental Specialist

Checked by:
Saiful Islam Imran
Deputy Manager

House# 734 (1-A), Road# 10, Avenue# 04, DOHS Mirpur Dhaka-1216, Bangladesh.
Tel: +8809617035444; +8801822758548, Email: dscl@dsclbd.com Web: www.dsclbd.com

DSCL

Development Solutions Consultant Limited

Multidisciplinary Development Consultants

DSCL Environmental Laboratory

Name of the Project	**ESIA Study for the Development of Burimari Land Port under BBIN MPA Program**
Description of sample	Ground Water Quality
Sample Collector	Collected by DSCL Personnel
Sampling Date	13 December 2021

Ground water Quality Analysis (Onsite)

Parameters	Unit	GW_01 26.406289°N, 88.931902°E Tube well Water Infront of BGB Check post 02 Established 2014 Depth: 45 Feet	GW_02 26.404870°N 88.927190°E Tube well Water Adjacent to Zero Point Bazer Area Established 2018 Depth: 35 Feet	Standards for Ground Water**	Analysis Method
pH*	-	6.73	8.65	6.5-8.5	Multimeter
Temperature	° Celsius	27.2	26.5	20-30	Multimeter
Electricity Conductivity		124	365	NYS	Multimeter
Salinity		52.1	174		Multimeter
Total Dissolved Solids (TDS)*	mg/l	73.5	230	1000	Multimeter

Note:
*** The Standards for Inland Surface Water have been taken from the Environmental Conservation Rules, 1997 which was amended on 19thJuly 2005 vide S.R.O. No. 220-Law/2005.*
NYS: Not Yet Standardize

Test Performed by:
Pinon Nath
Jr. Environmental Specialist

Development Solutions Consultant Limited * DSCL *

Checked by:
Saiful Islam Imran
Deputy Manager

House# 734 (1-A), Road# 10, Avenue# 04, DOHS Mirpur Dhaka-1216, Bangladesh.
Tel: +8809617035444; +8801822758548; Email: dscl@dsclbd.com Web: www.dsclbd.com

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Location	Sample Site Description
North Side of BGB Camp **(NM_01)**	➢ Moderate movement of people. ➢ Beside BGB Camp ➢ Traffic volume moderate ➢ Residential Area
Zero Point Bazer Area **(NM_02)**	➢ Moderate amount of dust particles was present ➢ Traffic volume was high ➢ People movement high ➢ Opposite side of Land port office
Beside Darala River **(NM_03)**	➢ Traffic volume was very low ➢ People movement low ➢ Beside Dharala River
BGB Check post 02 **(NM_04)**	➢ People movement was high ➢ Traffic volume was high ➢ Close to Zero Point
BGB Check post 01 **(NM_05)**	➢ Traffic volume was very high ➢ People movement high ➢ Beside Market ➢ Loading and Unloading area
Near Burir Hotel **(NM_06)**	➢ People movement was high ➢ Traffic volume was high ➢ Stone Crusher activity ongoing

Test Performed by:
Pinon Nath
Jr. Environmental Specialist

Development Solutions Consultant Limited * DSCL *

Checked by:
Saiful Islam Imran
Deputy Manager

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DSCL Environmental Laboratory

Name of the Project	**ESIA Study for the Development of Burimari Land Port under BBIN MPA Program**
Description of sample	Noise Level Measurement
Sample Collector	Collected by DSCL Personnel
Sampling Date	08 December 2021- 13 December 2021

Noise Level Analysis

Sample ID	Sample Location	GPS Location	Land Use Category	Day Time		Noise Level (dBA) (LAeq)	Night Time		Noise Level (dBA) (LAeq)
				Start	End		Start	Start	
NM_01	North Side of BGB Camp	26.405437°N 88.923273°E	Residential	03:00 pm	04:00 pm	58.76	09:00 pm	10:00 pm	59.76
NM_02	Zero Point Bazer Area	26.404541°N 88.925656°E	Commercial	12:00 pm	01:00 pm	71.60	09:05 pm	10:05 pm	64.76
NM_03	Beside Darala River	26.406051°N 88.931064°E	Residential	10:00 am	11:00 am	50.56	09:03 pm	10:03 pm	45.20
NM_04	BGB Check post 02	26.406898°N 88.923831°E	Residential	11:00 am	12:00 pm	71.00	09:15 pm	10:15 pm	48.16
NM_05	BGB Check post 01	26.405292°N 88.924887°E	Commercial	10:00 am	11:00 am	77.30	09:27 pm	10:27 pm	61
NM_06	Near Burir Hotel	26.403220°N 88.927400°E	Mixed Area	03:00 pm	04:00 pm	71.7	09:00 pm	10:00 pm	67.20

- *Notes:*
- *Land use category is based on the classification provided in the Noise Pollution Control Rules (2006)*
- *Shaded cell indicates noise levels in excess of Noise Pollution Control Rules ambient noise limits for a given land use area*
- *The sound level standards for commercial area are 70 at day time and 60 at night time.*
- *The sound level standards for residential area are 55 at day time and 45 at night time.*
- *The sound level standards for mixed area are 60 at day time and 50 at night time.*
- *Noise Level is the average noise recorded over the duration of the monitoring period*

Abbreviation: NM- Noise Measurement; dB – decibel; NGF-Narsingdi Gas Field; TGF- Titas Gas Field

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Name of the Project	**ESIA Study for the Development of Burimari Land Port under BBIN MPA Program**
Sub-project Location	AAQ_03 (26.404480N 88.925669E)
Sampling Location	Zero Point Bazer Area, Burimari Land Port, Patgram Upazila, Lalmonirhat
Description of sample	Ambient Air Quality Test
Sample Collector	Collected by DSCL Personnel
Sampling Date	10 December 2021

Test Result of Ambient Air Quality Analysis

Parameter	Unit	AAQ_03 (26.404480°N 88.925669°E, Zero Point Bazer Area)	Bangladesh Standard	Duration (hours)	Method of Analysis
$PM_{2.5}$	µg/m³	73.21	65	24	AEROQUAL Series 500 Particulate matter monitors Gravimetric
PM_{10}	µg/m³	141.03	150	24	
SO_2	µg/m³	72.32	365	24	AEROQUAL Series 500 SOx monitor
NO_x	µg/m³	56.98	100	Annual	AEROQUAL Series 500 NOx monitor
CO	ppm	3	9	8	CO Meter
O_3	µg/m³	0.68	157	8	AEROQUAL Series 500 O3 monitor
VOC	ppm	57.35	NYS	8	AEROQUAL Series 500 VOC monitor
Weather Conditions		Sunny	-	-	-

DSCL Environmental Laboratory, December 2021

** The Bangladesh National Ambient Air Quality Standards have been taken from the Environmental Conservation Rules, 1997 which was amended on 19th July 2005 vide S.R.O. No. 220-Law/2005.

* CO concentrations and standards are 8-hourly only.

Location	Sample Site Description
Zero Point Bazer Area, Burimari Land Port, Patgram Upazila, Lalmonirhat **(AAQ 03)**	➢ Higher amount of dust particles was present ➢ Higher movement of people. ➢ Bazer Area ➢ Traffic volume high ➢ Low level of vegetation is present

Test Performed by:
Pinon Nath
Jr. Environmental Specialist

Development Solutions Consultant Limited * DSCL *

Checked by:
Saiful Islam Imran
Deputy Manager

House# 734 (1-A), Road# 10, Avenue# 04, DOHS Mirpur Dhaka-1216, Bangladesh.
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Name of the Project	**ESIA Study for the Development of Burimari Land Port under BBIN MPA Program**
Sub-project Location	AAQ_01(26.406051N 88.931064E)
Sampling Location	Beside Dharala River, Burimari Land Port, Burimari Union, Patgram Upazila, Lalmonirhat
Description of sample	Ambient Air Quality Test
Sample Collector	Collected by DSCL Personnel
Sampling Date	8 December 2021

Test Result of Ambient Air Quality Analysis

Parameter	Unit	AAQ_01 26.406051°N 88.931064°E Beside Dharala River	Bangladesh Standard	Duration (hours)	Method of Analysis
$PM_{2.5}$	µg/m³	53.49	65	24	AEROQUAL Series 500 Particulate matter monitors Gravimetric
PM_{10}	µg/m³	88.65	150	24	
SO_2	µg/m³	63.87	365	24	AEROQUAL Series 500 SOx monitor
NO_x	µg/m³	47.77	100	Annual	AEROQUAL Series 500 NOx monitor
CO	ppm	1	9	8	CO Meter
O_3	µg/m³	0.56	157	8	AEROQUAL Series 500 O3 monitor
VOC	ppm	32.67	NYS	8	AEROQUAL Series 500 VOC monitor
Weather Conditions		Sunny	-	-	-

DSCL Environmental Laboratory, December 2021

** The Bangladesh National Ambient Air Quality Standards have been taken from the Environmental Conservation Rules, 1997 which was amended on 19th July 2005 vide S.R.O. No. 220-Law/2005.

* CO concentrations and standards are 8-hourly only.

Location	Sample Site Description
Beside Dharala River, Burimari Land Port, Burimari Union, Patgram Upazila, Lalmonirhat **(AAQ 01)**	➢ Moderate amount of dust particles was present ➢ Higher movement of people. ➢ Beside Dharala River ➢ Traffic volume moderate ➢ A high level of vegetation was present

Test Performed by:
Pinon Nath
Jr. Environmental Specialist

Development Solutions Consultant Limited * DSCL *

Checked by:
Saiful Islam Imran
Deputy Manager

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Name of the Project	**ESIA Study for the Development of Burimari Land Port under BBIN MPA Program**
Sub-project Location	AAQ_02 (26.405430N 88.9232181E)
Sampling Location	North Side of BGB Camp, Burimari Land Port, Patgram Upazila, Lalmonirhat
Description of sample	Ambient Air Quality Test
Sample Collector	Collected by DSCL Personnel
Sampling Date	9 December 2021

Test Result of Ambient Air Quality Analysis

Parameter	Unit	AAQ_02 26.405430°N 88.9232181°E North Side of BGB Camp	Bangladesh Standard	Duration (hours)	Method of Analysis
$PM_{2.5}$	µg/m³	61.34	65	24	AEROQUAL Series 500 Particulate matter monitors Gravimetric
PM_{10}	µg/m³	97.54	150	24	
SO_2	µg/m³	58.65	365	24	AEROQUAL Series 500 SOx monitor
NO_x	µg/m³	45.54	100	Annual	AEROQUAL Series 500 NOx monitor
CO	ppm	1	9	8	CO Meter
O_3	µg/m³	0.52	157	8	AEROQUAL Series 500 O3 monitor
VOC	ppm	38.43	NYS	8	AEROQUAL Series 500 VOC monitor
Weather Conditions		Sunny	-	-	-

DSCL Environmental Laboratory, December 2021

** The Bangladesh National Ambient Air Quality Standards have been taken from the Environmental Conservation Rules, 1997 which was amended on 19th July 2005 vide S.R.O. No. 220-Law/2005.

* CO concentrations and standards are 8-hourly only.

Location	Sample Site Description
North Side of BGB Camp, Burimari Land Port, Patgram Upazila, Lalmonirhat **(AAQ 02)**	➢ Higher amount of dust particles was present ➢ Higher movement of people. ➢ Adjacent to the BGB Camp ➢ Traffic volume moderate ➢ Moderate level of vegetation is present

Test Performed by:
Pinon Nath
Jr. Environmental Specialist

Development Solutions Consultant Limited * DSCL *

Checked by:
Saiful Islam Imran
Deputy Manager

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TEST REPORT NO: 1001405054 **Dec.26,2021**

UL ORDER NO: 14140733

Applicant : DEVELOPMENT SOLUTIONS CONSULTANT LIMITED **Test Date :** Dec.15 - 26,2021
Address : HOUSE-734, 1-A, ROAD-10, AVENUE-4, DOHS MIRPUR, DHAKA-1216, BANGLADESH

Contact Person : MD. MASHIUR RAHMAN

Sample Description: SOIL SAMPLE COLLECTED FROM PROJECT SITE.

Testing Protocol: Self-Reference

Project Name: ESIA Study for the Development of Burimari Land Port under BBIN MPA Program

Sample ID: BR_SL_01, BR_SL_02

Source: Soil Samples from the site

Sample Information :

Sample ID	Description	Equivalent Code / Color
001	SOIL SAMPLE	BR_SL_01
002	SOIL SAMPLE	BR_SL_02

For and on behalf of
UL VS Bangladesh Ltd.

Md. Nur Alam – Lab Technical & Operations Manager

UL VS Bangladesh Ltd
The Pearl Trade Center (5th,14th&15th floor), Cha- 90/3, Progoti Sharani, North Badda, Dhaka 1212, Bangladesh.
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TEST REPORT NO: 1001405054 **Dec.26,2021**

UL ORDER NO: 14140733

TEST	Sample ID	
	001	002
pH Value	NC	NC
Sulphide (SO_4)	NC	NC
Nitrate (NO_3)	NC	NC
Total Iron (Fe)	NC	NC
Total Manganese(Mn)	NC	NC
Total Lead (Pb)	NC	NC
Total Zinc (Zn)	NC	NC
Total Potassium (K)	NC	NC

Note: P = Pass ; F = Fail ; NC = No Comment ; NA = Not Applicable ; ** = test result(s) will be added later

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TEST REPORT NO:	1001405054	Dec.26,2021
UL ORDER NO:	14140733	

(01) pH Value

Test Method: With reference USEPA 9045 D

Sample ID	Ref. Sample ID	Result	Requirement	Comment
001	BR_SL_01	5.6	-	NC
002	BR_SL_02	5.5	-	NC

(02) Sulphate (SO_4)

Test Method: Analysis by Photometric Method

Sample ID	Ref. Sample ID	Detection limit, mg/kg	Result, mg/kg	Requirement, mg/kg	Comment
001	BR_SL_01	10	97.4	-	NC
002	BR_SL_02	10	158.1	-	NC
"<" means "less than" ; "mg/kg" means "milligram per kilogram; "					

(03) Nitrate (NO_3)

Test Method: With reference APHA/SM 4500N-C

Sample ID	Ref. Sample ID	Detection limit, mg/kg	Result, mg/kg	Requirement, mg/kg	Comment
001	BR_SL_01	5	<5	-	NC
002	BR_SL_02	5	<5	-	NC
"<" means "less than" ; "mg/kg" means "milligram per kilogram; "					

(04) Total Iron (Fe)

Test Method: Acid Digestion with ICP analysis

Sample ID	Ref. Sample ID	Substance name	CAS No.	Detection limit, mg/kg	Result, mg/kg	Requirement, mg/kg	Comment
001	BR_SL_01	Iron (Fe)	7439-89-6	10	24995	-	NC
002	BR_SL_02	Iron (Fe)	7439-89-6	10	25045	-	NC
"<" means "less than" ; "mg/kg" means "milligram per kilogram"							

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TEST REPORT NO: 1001405054 **Dec.26,2021**

UL ORDER NO: 14140733

(05) Total Manganese(Mn)

Test Method: Acid Digestion with ICP analysis

Sample ID	Ref. Sample ID	Substance name	CAS No.	Detection limit, mg/kg	Result, mg/kg	Requirement, mg/kg	Comment
001	BR_SL_01	Manganese (Mn)	7439-96-5	10	340	-	NC
002	BR_SL_02	Manganese (Mn)	7439-96-5	10	167	-	NC
"<" means "less than" ; "mg/kg" means "milligram per kilogram"							

(06) Total Lead (Pb)

Test Method: Acid Digestion with ICP analysis

Sample ID	Ref. Sample ID	Substance name	CAS No.	Detection limit, mg/kg	Result, mg/kg	Requirement, mg/kg	Comment
001	BR_SL_01	Lead (Pb)	7439-92-1	5	5	-	NC
002	BR_SL_02	Lead (Pb)	7439-92-1	5	<5	-	NC
"<" means "less than" ; "mg/kg" means "milligram per kilogram"							

(07) Total Zinc (Zn)

Test Method: Acid Digestion with ICP analysis

Sample ID	Ref. Sample ID	Substance name	CAS No.	Detection limit, mg/kg	Result, mg/kg	Requirement, mg/kg	Comment
001	BR_SL_01	Zinc (Zn)	7440-66-6	10	41	-	NC
002	BR_SL_02	Zinc (Zn)	7440-66-6	10	37	-	NC
"<" means "less than" ; "mg/kg" means "milligram per kilogram"							

(08) Total Potassium (K)

Test Method: Acid Digestion with ICP analysis

Sample ID	Ref. Sample ID	Substance name	CAS No.	Detection limit, mg/kg	Result, mg/kg	Requirement, mg/kg	Comment
001	BR_SL_01	Potassium (K)	7440-09-7	10	7463	-	NC
002	BR_SL_02	Potassium (K)	7440-09-7	10	8047	-	NC
"<" means "less than" ; "mg/kg" means "milligram per kilogram"							

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TEST REPORT NO:	1001405054	Dec.26,2021
UL ORDER NO:	14140733	

Page : 5 of 5

***** End of Report *****

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TEST REPORT NO: 1001413932 **Dec.26,2021**

UL ORDER NO: 14155477

Applicant : DEVELOPMENT SOLUTIONS CONSULTANT LIMITED **Test Date :** Dec.15 - 26,2021
Address : HOUSE-734, 1-A, ROAD-10, AVENUE-4, DOHS MIRPUR, DHAKA-1216, BANGLADESH

Contact Person : MD. MASHIUR RAHMAN

Sample Description: SURFACE WATER
Testing Protocol: Self-Reference
Project Name: ESIA Study for the Development of Burimari Land Port under BBIN MPA Program
Sample ID: BR_SW_01, BR_SW_02
Source: Surface Water Samples from the site

Sample Information :

Sample ID	Description	Equivalent Code / Color
001	SURFACE WATER SAMPLE	BR_SW_01
002	SURFACE WATER SAMPLE	BR_SW_02

For and on behalf of
UL VS Bangladesh Ltd.

Md. Nur Alam – Lab Technical & Operations Manager

UL VS Bangladesh Ltd
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TEST REPORT NO: 1001413932 **Dec.26,2021**

UL ORDER NO: 14155477

TEST	Sample ID	
	001	002
Total Suspended Solid (TSS)	NC	NC
Chemical Oxygen Demand (COD)	NC	NC
Biological Oxygen Demand (BOD) (5-day)	NC	NC
Hardness (as $CaCO_3$)	NC	NC
Turbidity	NC	NC
Chloride (Cl)	NC	NC
Phosphate (PO_4)	NC	NC
Sulphide (SO_4)	NC	NC
Oil & Grease	NC	NC
Total Iron (Fe)	NC	NC

Note: P = Pass ; F = Fail ; NC = No Comment ; NA = Not Applicable ; ** = test result(s) will be added later

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TEST REPORT NO: 1001413932 **Dec.26,2021**

UL ORDER NO: 14155477

(01) Total Suspended Solid (TSS)

Test Method: With reference APHA/SM 2540D

Sample ID	Ref. Sample ID	Detection limit, mg/L	Result, mg/L	Requirement, mg/L	Comment
001	BR_SW_01	5	15	-	NC
002	BR_SW_02	5	17	-	NC
"<" means "less than" ; "mg/L" means "milligram per litre;					

(02) Chemical Oxygen Demand (COD)

Test Method: With reference APHA/SM 5220D

Sample ID	Ref. Sample ID	Detection limit, mg/L	Result, mg/L	Requirement, mg/L	Comment
001	BR_SW_01	5	14	-	NC
002	BR_SW_02	5	17	-	NC
"<" means "less than" ; "mg/L" means "milligram per litre;					

(03) Biological Oxygen Demand (BOD) (5-day)

Test Method: With reference APHA/SM 5210B

Sample ID	Ref. Sample ID	Detection limit, mg/L	Result, mg/L	Requirement, mg/L	Comment
001	BR_SW_01	2	6	-	NC
002	BR_SW_02	2	8	-	NC
"<" means "less than" ; "mg/L" means "milligram per litre;					

(04) Hardness (as CaCO3)

Test Method: With reference SM2340C

Sample ID	Ref. Sample ID	Detection limit, mg/L	Result, mg/L	Requirement, mg/L	Comment
001	BR_SW_01	10	48	-	NC
002	BR_SW_02	10	63	-	NC
"<" means "less than" ; "mg/L" means "milligram per litre;					

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TEST REPORT NO:	1001413932	Dec.26,2021
UL ORDER NO:	14155477	

(05) Turbidity

Test Method: With reference Nephelometric

Sample ID	Ref. Sample ID	Detection limit, NTU	Result, NTU	Requirement, NTU	Comment
001	BR_SW_01	10	<10	-	NC
002	BR_SW_02	10	<10	-	NC

(06) Chloride (Cl)

Test Method: Analysis by Titrimetric Method

Sample ID	Ref. Sample ID	Detection limit, mg/L	Result, mg/L	Requirement, mg/L	Comment
001	BR_SW_01	10	<10	-	NC
002	BR_SW_02	10	<10	-	NC
"<" means "less than" ; "mg/L" means "milligram per litre;					

(07) Phosphate (PO_4)

Test Method: Analysis by Photometric Method

Sample ID	Ref. Sample ID	Detection limit, mg/L	Result, mg/L	Requirement, mg/L	Comment
001	BR_SW_01	0.1	<0.1	-	NC
002	BR_SW_02	0.1	<0.1	-	NC
"<" means "less than" ; "mg/L" means "milligram per litre;					

(08) Sulphate (SO_4)

Test Method: Analysis by Photometric Method

Sample ID	Ref. Sample ID	Detection limit, mg/L	Result, mg/L	Requirement, mg/L	Comment
001	BR_SW_01	10	<10	-	NC
002	BR_SW_02	10	19.2	-	NC
"<" means "less than" ; "mg/L" means "milligram per litre;					

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TEST REPORT NO:	1001413932	Dec.26,2021
UL ORDER NO:	14155477	

(09) Oil & Grease

Test Method: With reference USEPA 1664

Sample ID	Ref. Sample ID	Detection limit, mg/L	Result, mg/L	Requirement, mg/L	Comment
001	BR_SW_01	0.5	<0.5	-	NC
002	BR_SW_02	0.5	<0.5	-	NC
"<" means "less than" ; "mg/L" means "milligram per litre; "					

(10) Total Iron (Fe)

Test Method: Acid Digestion with ICP analysis

Sample ID	Ref. Sample ID	Substance name	CAS No.	Detection limit, mg/L	Result, mg/L	Requirement, mg/L	Comment
001	BR_SW_01	Iron (Fe)	7439-89-6	0.5	<0.5	-	NC
002	BR_SW_02	Iron (Fe)	7439-89-6	0.5	<0.5	-	NC
"<" means "less than" ; "mg/L" means "milligram per litre;							

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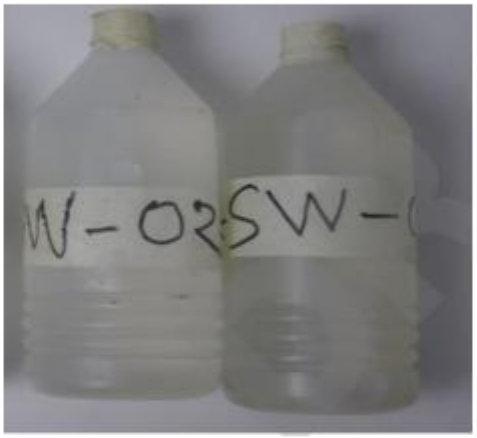
TEST REPORT NO:	1001413932	Dec.26,2021
UL ORDER NO:	14155477	



***** End of Report *****

UL VS Bangladesh Ltd
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TEST REPORT NO: 1001413937 **Dec.26,2021**

UL ORDER NO: 14155476

Applicant : DEVELOPMENT SOLUTIONS CONSULTANT LIMITED **Test Date :** Dec.15 - 26,2021
Address : HOUSE-734, 1-A, ROAD-10, AVENUE-4, DOHS MIRPUR, DHAKA-1216, BANGLADESH

Contact Person : MD. MASHIUR RAHMAN

Sample Description: GROUNDWATER
Testing Protocol: Self-Reference
Project Name: ESIA Study for the Development of Burimari Land Port under BBIN MPA Program
Sample ID: BR_GW_01, BR_GW_02
Source: Groundwater Samples from the site

Sample Information :

Sample ID	Description	Equivalent Code / Color
001	GROUNDWATER SAMPLE	BR_GW_01
002	GROUNDWATER SAMPLE	BR_GW_02

For and on behalf of
UL VS Bangladesh Ltd.

Md. Nur Alam – Lab Technical & Operations Manager

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TEST REPORT NO: 1001413937 **Dec.26,2021**

UL ORDER NO: 14155476

TEST	Sample ID	
	001	002
Chloride (Cl)	NC	NC
Phosphate (PO_4)	NC	NC
Nitrate (NO_3)	NC	NC
Colour	NC	NC
Odour	NC	NC
Total Coliform (TC) ♦	NC	NC
Faecal Coliform (FC) ♦	NC	NC
Total Arsenic (As)	NC	NC
Total Iron (Fe)	NC	NC
Total Manganese(Mn)	NC	NC

Note: **P = Pass ; F = Fail ; NC = No Comment ; NA = Not Applicable ; ** = test result(s) will be added later**
♦ Marked test was subcontracted to an ISO 17025 accredited laboratory.

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(01) Chloride (Cl)

Test Method: Analysis by Titrimetric Method

Sample ID	Ref. Sample ID	Detection limit, mg/L	Result, mg/L	Requirement, mg/L	Comment
001	BR_GW_01	10	<10	-	NC
002	BR_GW_02	10	<10	-	NC
"<" means "less than" ; "mg/L" means "milligram per litre;					

(02) Phosphate (PO_4)

Test Method: Analysis by Photometric Method

Sample ID	Ref. Sample ID	Detection limit, mg/L	Result, mg/L	Requirement, mg/L	Comment
001	BR_GW_01	0.1	<0.1	-	NC
002	BR_GW_02	0.1	<0.1	-	NC
"<" means "less than" ; "mg/L" means "milligram per litre;					

(03) Nitrate (NO_3)

Test Method: With reference APHA/SM 4500N-C

Sample ID	Ref. Sample ID	Detection limit, mg/L	Result, mg/L	Requirement, mg/L	Comment
001	BR_GW_01	5	<5	-	NC
002	BR_GW_02	5	<5	-	NC
"<" means "less than" ; "mg/L" means "milligram per litre; "					

(04) Colour

Test Method: With reference ISO 7887 Method B

Sample ID	Ref. Sample ID	Detection limit (Hazen, Pt/Co Unit)	Result, (Hazen, Pt/Co Unit)	Requirement, (Hazen, Pt/Co Unit)	Comment
001	BR_GW_01	5	<5	-	NC
002	BR_GW_02	5	<5	-	NC
"<" means "less than" ;					

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(05) Odour

Test Method: With reference to APHA/SM 2150

Sample ID	Ref. Sample ID	Result	Requirement	Comment
001	BR_GW_01	Odourless	-	NC
002	BR_GW_02	Odourless	-	NC

(06) Total Coliform (TC)

Test Method: With reference USEPA 9132

Sample ID	Ref. Sample ID	Result, CFU/100mL	Requirement, CFU/100mL	Comment
001	BR_GW_01	0	-	NC
002	BR_GW_02	0	-	NC
"<" means "less than" ; "CFU" means "colony forming units"				

(07) Faecal Coliform (FC)

Test Method: Membrane Filtration

Sample ID	Ref. Sample ID	Result, CFU/100mL	Requirement, CFU/100mL	Comment
001	BR_GW_01	0	-	NC
002	BR_GW_02	0	-	NC
"<" means "less than" ; "CFU" means "colony forming units"				

(08) Total Arsenic (As)

Test Method: Acid Digestion with ICP analysis

Sample ID	Ref. Sample ID	Substance name	CAS No.	Detection limit, mg/L	Result, mg/L	Requirement, mg/L	Comment
001	BR_GW_01	Arsenic (As)	7440-38-2	0.02	<0.02	-	NC
002	BR_GW_02	Arsenic (As)	7440-38-2	0.02	<0.02	-	NC
"<" means "less than" ; "mg/L" means "milligram per litre"							

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(09) Total Iron (Fe)

Test Method: Acid Digestion with ICP analysis

Sample ID	Ref. Sample ID	Substance name	CAS No.	Detection limit, mg/L	Result, mg/L	Requirement, mg/L	Comment
001	BR_GW_01	Iron (Fe)	7439-89-6	0.5	<0.5	-	NC
002	BR_GW_02	Iron (Fe)	7439-89-6	0.5	<0.5	-	NC
"<" means "less than" ; "mg/L" means "milligram per litre;							

(10) Total Manganese(Mn)

Test Method: Acid Digestion with ICP analysis

Sample ID	Ref. Sample ID	Substance name	CAS No.	Detection limit, mg/L	Result, mg/L	Requirement, mg/L	Comment
001	BR_GW_01	Manganese (Mn)	7439-96-5	0.5	<0.5	-	NC
002	BR_GW_02	Manganese (Mn)	7439-96-5	0.5	<0.5	-	NC
"<" means "less than" ; "mg/L" means "milligram per litre;							

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***** End of Report *****

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Annex D: Public Consultation - FGD

Summary of Consultation Meeting with Officials (I)

Sl	Key issues raised	Participant/s type	Response
1	Brief on the project	AD, Burimari Land Port	The AD of Burimari Land Port welcomed and thanked all the participants for their presence in the public consultation meeting. Then he gave a brief on the project.
		Environmental and Social consultants	The consultants discussed to the participants what environmental and social standards would be maintained throughout the project, like, preparing separate documents on Environmental and Social Management Framework (ESMF), Environmental and Social Impact Assessment (ESIA), Stakeholder Engagement Plan (SEP), Labor Management Procedure (LMP), Resettlement Policy Framework (RPF), Resettlement Action Plan (RAP), Sexual Exploitation & Abuse and Sexual Harassment (SEA/SH), Gender Action Plan (GAP), Environmental and Social Commitment Plan (ESCP)
		Company Commander, Border Guard Bangladesh (BGB)	The BGB company commander then said that his organization would try to provide all possible assistance in implementing the project.
2	How is the price determined in the case of land acquisition?	AD, Burimari Land Port	Social consultants firstly said that, for the development or expansion of the existing land port, according to the World Bank's Environmental and Social Framework (ESF), the project Implementing Agency's primary target is to avoid any private property/ land acquisition. If it is not avoidable, the project will follow the Resettlement Policy Framework and Resettlement Action Plan for land acquisition, where policy from both the Government of Bangladesh and The World Bank will be followed. It was also discussed that to determine the price of land or any loss (e.g. structures, crops, tress, business, etc.), there will be Property Valuation/Market Survey.
		Mr. Sayed, President, C&F Agents Union	He said that, if possible, there would be about 25 acres of vacant land on the east side of the present port. That space can be acquired and used for project work.
3	If someone runs a floating business on another's land or Government-owned land (Khas) and if that business is affected, how will that person be paid compensation?	Md. Anowar Hossain (In-Charge, Immigration Police, Burimari land port)	Answering the question raised by the Immigration Police consultants discussed in the meeting that any business, whether small, medium or large, permanent or temporary, would be compensated if affected by the project. The participant also wanted to know that if land acquisition takes place, compensation will be determined for the lands on the front side of the road, away from the main road. Consultants informed that by evaluating the market survey and government rate land price, all affected person/s should get a fair price for their land parcel.

Sl	Key issues raised	Participant/s type	Response
4	If the land acquisition takes place, what will the community living very close to the land port do	From representatives that are living in the proposed land area adjacent to the existing land port (near zero point)	Consultants assured them again that if the land acquisition is unavoidable, the project will follow the RAP, and accordingly, affected persons will be compensated and provided support for their resettlement.
5	The education system and children's security	Mst. Rahena Sultana, Head Teacher of primary school, and Community representatives	Stone is the most important of the various products imported through this land port. The stone crushing business around this port area is currently making a considerable contribution to the economy of Burimari. But due to the business of stone crushing, stone powder, etc., the environment has become much polluted in the area around 5/8 km near Burimari port. All the citizens living here are moving in a dusty and sandy environment. As a result, people suffer from shortness of breath, asthma, cold, and cough. The headmistress drew the attention of the authorities to keep in mind reducing the environmental pollution by expanding and modernizing the port area. The participants agreed with what she said, and they suggested that a particular area with a boundary is set up in an uninhabited area for the stone-related businesses and that the companies regularly set up sprinklers on their behalf and abide by those rules. Nearly one-third of the participant said that the education system in this area is poor. In addition, it is plagued with various problems due to which the number of school dropouts is also high. More than 15 primary schools are located in this area, contrarily only 1 high school and 1 college which is 6 kilometers away from this area. The Head Teacher again said, *'A country is bigger than the individual.'* Therefore, in the interest of the country's development, we have to take any action positively. But the project will be implemented by giving priority to the 6 basic needs of the people - that is what they hope. Burimari is not as green as before. All the trees in the area are now covered in dust. If the Ministry of Environment initiates a tree planting program here, it will be perfect for the area. Excessive load-sheading has resulted in students not being able to study correctly.
6	Labor-related issues	Mst. Rahena Sultana, Head Teacher of primary school	All workers who come to the area to work on the project must ensure that they have the COVID-19 vaccine. The use of gloves, helmets, boots, etc., should be ensured to avoid the risk of accidents and the safety of those who will work as laborers.
		President, Land port labor union	About 3000 workers are involved in various activities of the port. They do not have restrooms, toilets, overnight accommodation, etc., in the port area.

Sl	Key issues raised	Participant/s type	Response
		Mr. Sayed, President, C&F Agents Union	There is no accommodation for the drivers of freight vehicles arriving in the port area. Most of the incoming drivers spend the night in freight cars or trucks, which is very risky to do their job correctly. So, accommodation needs to be arranged for them.
7	Communication facilities	All Participants	Getting students to school is challenging as they have to sit in traffic jams for a long time almost every day. In addition, Heavy mud on rainy days and extensive dust in standard times create a tremendous suffering to the school-college going children. Furthermore, road accident happens very often there, driving of over loaded tracks in less width road is responsible for accidents. Accidents often happen because of narrow roads, broken roads. In addition, dust, severe traffic congestion has made communication in this area difficult. Communication will be much easier if a bypass road can be made from Burimari Land port zero point aligning with the rail way line. Undoubtedly it will be a tremendous support for local residence.
		Mr. Sayed, President, C&F Agents Union	The highway which started from Burimari Zero Point area and passed through Burimari Bazar towards Patgram is quite narrow considering the number of vehicles currently plying in the area. This road needs to be at least 6 lanes. This will almost completely alleviate the severe traffic congestion in the area.
		Company Commander, Border Guard Bangladesh (BGB)	He said if the port is developed, the country will develop. First, the allocation of BGB's security needs to be expanded. The existing highways need to be widened. A separate walkway has to be built for people to walk. In this project, not only all the infrastructural development has to be done considering Burimari port, but also infrastructural development has to be done keeping in view the commoner.
8	Health system of this area	All Participants	Nearly all the participants said that the health system of this area is terrible. Community clinic, Upazilla health complex, even in Sadar hospitals don't have sufficient medical facilities, and nowadays they don't even expect to get adequate service. Consequently, critical patients are taken to rangpur medical where they get proper treatment. At least 70 people in this area have died of silicosis due to excessive air pollution, and 100 more people are still infected. A large number of residences of this area suffer from Asthma, silicosis, shortness of breath, and other critical diseases due to open stone crushing miles.

Sl	Key issues raised	Participant/s type	Response
9	Environmental awareness of stone crushing company	All Participants	Majority of the participants blame 'Stone traders' for environmental pollution as crushing rocks in the open air, the dust of the rock spreads in the air and pollutes the air. This dust after being washed by rain water goes into rivers or reservoirs and causes water pollution. As there is a possibility of air pollution by the project, the authority should take necessary steps to reduce the environmental pollution. Wastes of this project should be kept or managed away from localities. If the stone crushing traders' water in regular basis then the dust will be reduced in this area. Regular monitoring by law enforcement agencies will reduce such irregularities.
		Mr. Sayed, President, C&F Agents Union	• At present, the volume of Burimari land port-centric business has increased many times over. The area of Burimari land port is presently approximately 11 acres. Even if the size of the port is increased 10 times more than it is now, it will not be enough to run port-based businesses. • Neither the traders nor the appropriate authorities are taking any responsibility to reduce the environmental pollution by the stone business. The stone workers are risking their lives to earn a living. The stone business is one of the major contributors to the economy of the region. According to the government policy, all the stone crushing businesses are supposed to operate within 3 km of the port area, but at present the stone business establishments are spread over an area of about 8 km. Therefore, administrative monitoring is very important for sustaining the business as well as keeping the environment safe.
10	Development of Land Port Immigration related issues and other facilities	Md. Anowar Hossain (In-Charge, Immigration Police, Burimari land port)	• The current situation of rest, toilets, food intake for our immigrant passengers is very inadequate compared to other countries in the international arena. Since they have to face immigration first by crossing the border from a neighboring country, their first impression of our country will be positive once immigration meets international standards. So, we want a tidy, tidy, clean immigration. • Public consultation and FGD with the community female indicate that there is no issue regarding women trafficking. But during the construction phase migrated workers will be there. BGB, immigration police are aware of this situation and responsible for law enforcement in the project area.
11	What should be kept in mind for this project?	All Participants	• There are no residence facilities for drivers and staff who come from India or other

Sl	Key issues raised	Participant/s type	Response
			countries and even there is no toilet or bathing facilities. These issues must be kept in mind planning this project. • A mosque should be built within port boundary so that workers can pray in time properly. • To reduce road accident a foot over bridge needs to be installed in the land port area. • The labors are often victims of accidents. Contrarily, there is no insurance facilities for them. There should be an insurance facility so that they can get support.

Figure 1: Consultation Meeting, Burimari Land Port, Burimari, Patgram, Lalmonirhat

Summary of Focus Group Discussion

Issues discussed	Participants, Opinion, comments and suggestions	Response to Questions / Action Point
General perception about the project	**Local Importers/ C&F Agents:** Respondents said they did not know anything about land port development activities. Therefore, they think that the port development activities will bring opportunities for improvement in their area. **Community elite persons:** Almost all the respondents said that they had been hearing this issue in public for a few days. Notwithstanding, they wanted a proper development therein. **Female:** They said that they had not heard anything about the project from anyone. **Male:** Majority of them did not know of any projects related to the development activities of Burimari land port. Some said they heard something regarding this in public. **Truck labor association representative:** All the respondents said last few days they are hearing from the people, the surrounding area which is adjacent to the land port will be acquired. They believe that if this project executes there, it will assist them to their economic development.	Participants in the discussion were given a brief overview of the ACCESS MPA project.
Advantages and Disadvantages (Who will directly affected directly/indirectly)	**Local Importers/ C&F Agents:** They said the development of the port will help all the people who are involved in port related activities especially the importers will directly be benefited. The landowners whose land will acquire for this project; they will face a huge loss if they will not be provided reasonable compensation. **Community elite persons:** All the respondents said that if this project would execute, there would be an economic development of this area. This area will be cramped with vehicles and visitor if there will no proper management. Land owner, imported-exporter, businessman will directly be affected through this project, and the local people will indirectly be affected. **Female:** The women participants said if the size of the port is increased as a part of the project work, those who are living in the north side of the port will suffer as they will lose their land. Besides, no one has said anything about the advantages of the project. **Male:** they think that the impact of the project will be economic development of the area, which means that the socio-economic condition of the people of the area will also be better. About inconvenience, they said due to lack of proper management/ monitoring the authorities are not able to manage the activities of the port properly. The environment of their area is already much polluted due to the stone crushing activities resulting in respiratory diseases.	
what issues should be given priority in this project planning	They suggested some points these are given below; 12. Port area size should be increased 3 times more than at present	

Issues discussed	Participants, Opinion, comments and suggestions	Response to Questions / Action Point
	13. highway adjacent to the port has to be upgraded to 4 or 6 lane roads, starting from Zero Point to at least 10 km. 14. In order to reduce the amount of dust, regular water sprinkling should be done by water truck 15. Parking area should be increased 16. A bypass road should be constructed along the railway line 17. Planned sewerage system should be maintained 18. Stone-breaking businesses scattered over a wide area should be given the opportunity to conduct business by enclosing the boundaries in a certain place. 19. The bank is located about 3 km. away from the port. Therefore, it is important to set up bank branches inside the port to prevent wastage of time for traders. 20. It is necessary to set up a mosque inside the port. 21. Modern fire service system is required. 22. It is necessary to increase the skilled manpower in different institutions or departments of the port.	
Impacts due to this project and how safe is the environment for women and children	**Local Importers/ C&F Agents:** They believe that the project will not have a specific impact on women and children, but on all the people living in and around the project area. They said the Burimari area is safe enough for everyone, men and women alike. **Community elite persons:** Majority said they did not think the project would have any particular impact on women and children. They added that no snatching, theft or anything like this isn't often here. **Female:** They said the project will not have any special impact on women or children, but there is already heavy traffic in the area, which makes difficult for common people or school-going children to travel to anywhere. **Male:** They said Burimari is completely safe for women and children to move around. However, they believe that once construction begins, environmental pollution in the area may increase, which could increase health risks for people of all walks of life, not just women and children.	
Incidents of violence / torture/ sexual harassment of local women and female workers who works in Land port.	**Community elite persons:** They said they didn't hear anything regarding violence or Sexual harassment of women except a few. They also said their community leaders are aware against such offences. If they find anything alike, they along with law enforces agencies take actions immediately. According to them no female day labor works in this port. **Female:** The respondents said they had never been any incident of violence or torture against women in the area. They said they did not know if the women of the area had worked as laborers in any project before. **Male:** All the respondents said no incident of violence against women has taken place in this area before. No untoward incident has ever taken place with any female worker.	

Issues discussed	Participants, Opinion, comments and suggestions	Response to Questions / Action Point
Impact of non-local workers who will join this project activities and employment opportunity for Local worker to this project	**Local Importers/ C&F Agents:** Workers coming to work on the project will not have any problem working or staying in the area, they said. Local people will be interested in working if there is an opportunity to be involved in any kind of project work. **Community Elite Person:** They said there will be no such problem if the authority recruits non-local workers. And they suggested local worker should be given priority in this project. **Male**: They said there would be no particular difficulty for their area. However, if the supply of all the workers is brought from elsewhere, many people in the area will be deprived of the opportunity to work therein. **Female:** According to the respondents, it is better to employ locals as labor in the project, and there will be no such problem created if workers hired form other place. **Truck Labor association representatives:** They do not know whether there is any problem raised in the time of constructing land port but in that time no worker was appointed from the area. Later on, the people of the area expressed their dissatisfaction. They believe that socio-economic development will be possible if proper action plans for women is formulated with the project and involve the local women.	The project will have a Grievance Redress Committee that will work on resolving all types of complaints / grievances. Respondents were also consulted on who could be a member of such a committee.
Land Acquisition and compensation	**Local Importers/ C&F Agents:** They said that if land was acquired in the interest of the project in the port area, there would be no special problem if the land owners were given proper compensation. **Community elite persons:** All the respondents said reasonable compensation should be paid through proper authority without any hassle, and authority should be kept in mind that in no way do the local people avoid the opportunity to work on the project. **Male:** They said their prior experiences about land acquisition wasn't good enough. They had to pay bribe to get their compensation.	Participants were assured the first step will be to avoid acquisition as much as possible. If it is necessary to acquire land exclusively, a Resettlement Action Plan (RAP) will be prepared for Burimari Land Port area under the Resettlement Policy Framework (RPF). Compensation to the owners for the land acquired will be followed according to the RAP.
Perception about conflict resolving committee	All the participants said they don't have such committee yet, but if there is any, that must help to prevent any conflicts. They wanted a committee consisting of concerned authorities and local people's representatives may be formed to report any grievances or problems related to the project.	
Waste Management	**Local Importers/ C&F Agents:** They suggest that the materials or construction materials used in the project should be kept in a designated place and covered with tarpaulin material when the work is stopped to prevent the spread of such materials on the roads. **Community Elite Person:** They said that if the resources would not use properly in this project, environment pollution must increase along with tremendous suffering of the people of the area will	

Issues discussed	Participants, Opinion, comments and suggestions	Response to Questions / Action Point
	increase a lot. Project authorities should take workable action for this. **Male**: they said when the construction work for the development of port infrastructure starts, if the concerned people make arrangements for regular sprinkling of water on the roads, then the rate of dust and sand spreading in the air can be controlled to a great extent. **Female:** They said it is common to see in these works that rods, sand, etc. construction materials are left on the road during the work, which creates widespread problems in movement. They said that if the daily wastage is removed every day, there will be no harm to the environment.	
Impact on Environment due to this project	**Local Importers/ C&F Agents:** The said due to lack of proper management of construction material may causes for environmental pollution. **Community Elite Person:** They said as this area consisting of stone crushing miles along with passing huge number vehicles sand, dust and other particle mixing with air which cause several respiratory diseases. **Male:** They said their existing environment situation is terrible, there is a chance to increase pollution if there is no proper plan for environmental management.	
Educational Institutions	Respondents said there are 10/15 primary school in Burimari union where only 1 secondary and higher secondary college therein. There also 7/8 Nurani madrasah and 1 Government Madrasah in Burimari.	
Effect on ethnic group	They said there is no ethnic group in Burimari	
Damage of Educational / religious / cultural institutions or heritage sites	They said there is no such institution/sites in project area.	
Health care	**Local Importers/ C&F Agents:** They said, Patgram Upazilla Health Complex is located about 15 km away from Burimari. Besides, there is no other medical service provider nearby in their area. People usually go to the local pharmacy or village doctors for any ailment in the early stages. There is no first aid facility inside the port. **Community Elite Person:** They said People in the area are deprived of proper healthcare. The nearest ham quack is 2 km away. Even Upazilla health Complex, Sadar hospital don't have proper treatment. **Male**: Discussions on the state of healthcare in the area revealed that the number of quality healthcare providers is almost non-existent. People of the area have to rely on Lalmonirhat Sadar or Rangpur Sadar to get good medical care. Respondents said they receive medical services mainly from local pharmacies. **Female:** They said If the condition of a patient is critical or if he is a dying patient, the people of the area take him directly to Rangpur Medical without taking	

Issues discussed	Participants, Opinion, comments and suggestions	Response to Questions / Action Point
	him to Upazilla Health Complex or Lalmonirhat Sadar Hospital. **Truck labor association representative:** They said that the quality of health services in this area is very poor. If someone is sick, he first buys medicine from the pharmacy. When the situation is out of control then they are taken to Rangpur Medical College.	
Child marriage and Dowry system	**Female:** The respondents said that child marriage is almost non-existent in the area at present. But on the question of dowry, they said, there is no marriage in their area without dowry. Dowry is exchanged at the time of marriage in almost all the families and there is no such difference in the exchange of dowry between rich family or relatively poor family. Dowry is exchanged according to the ability of each family in this area. **Community Elite Person:** They said dowry is the major problem for marriage though percentage of child marriage is almost zero there. **Male:** Respondents said that at present 10% of child marriages are prevalent in their area. And this practice is more common in extremely poor families. However, the practice of exchanging dowry in marriage is seen in 100% of the families in the area. Dowry is a social custom in the area, they said	
Communication system	**Community Elite Person:** the construction of some new roads, such as the construction of a bypass road from Burimari railway station to the land port, would be a great benefit to the people of the area. **Male:** Participants said that the condition of roads in the area is not good. The road from Burimari port to Patgram through Burimari market is almost broken. Attempts to repair the road have not been made as long as there is an excess of heavy freight vehicles. The stone breaking business is spread in a scattered or unplanned way up to about 5/6 km from the port area.	
Labor Law	**Truck labor association representative:** When asked about the labor law, the participants who present there, could not give a clear idea about it. The president of the truck owners' association said he had heard about the labor law but had no idea why and how it was enforced. Even till today no person or organization has told us anything about this. He said that the workers in this area have to work for their own self.	Under the project there will be a Labor Management Procedure (LMP) which will ensure various instructions regarding labor related issues.

Annex E: Burimari Pictures


Figure: Burimari Land Port, Burimari, Patgram, Lalmonirhat


Figure: Surrounding area of the project location


Figure: Surrounding area of the project Location


Figure: Greenary surrounding the project area


Figure: Surrounding area of the project Location


Figure: Surrounding area of the project Location


Figure: Surrounding area of the project Location


Figure: FGD with Community elite person


Figure: FGD with Truck labor association representative


Figure: FGD with community female


Figure: FGD with community male


Figure: FGD with community male


Figure: Consultation Meeting, with the officials, Burimari Land Port, Burimari, Patgram, Lalmonirhat


Figure: FGD with Importer and C&F agent representatives

Annex F: Sample GRM Checklist

Grievance Form			
Grievance reference number (to be completed by Project):			
Contact details (May be submitted anonymously)	Name (s):		
	Address:		
	Telephone:		
	Email:		
How would you prefer to be contacted (check one)	By mail/post: ☐	By phone: ☐	By email ☐
Preferred language	☐ Bangla	☐ English	
Provide details of your grievance. Please describe the problem, who it happened to, when and where it happened, how many times, etc. Describe in as much detail as possible.			

What is your suggested resolution for the grievance, if you have one? Is there something you would like IA (BLPA, NBR, RHD) or another party/person to do to solve the problem?			
How have you submitted this form to the project?	Website ☐	Email ☐	By hand ☐
	In person ☐	By telephone ☐	Other (specify) ☐
Who filled out this form (If not the person named above)?	Name and contact details:		
Signature			
Name of IA's official assigned responsibility			
Resolved or referred to GRC1?	☐ Resolved	☐ Referred	If referred, date:
Resolved referred to GRC2?	☐ Resolved	☐ Referred	If referred, date:
Completion			
Final resolution (briefly describe)			
	Short description	Accepted ? (Y/N)	Acknowledgement signature
1st proposed solution			
2nd proposed solution			
3rd proposed solution			

Annex G: Sample Waste Management Plan

Waste Management Plan

1.GENERAL

Considerable quantities of wastes (general & construction) will be generated due to the construction of water supply schemes. Three types of wastes will be generated during construction:

- General Waste: Organic waste (foods, fruits, tree leaves etc.) and Inorganic (such as papers, plastic and glass bottles & containers, polythene etc.);
- Construction wastes: construction materials such as sand, piece of rocks, bricks, rods, geotextiles etc.
- Hazardous waste: chemicals, Oil, grease etc. from construction machinery etc.

2. OBJECTIVES

The main objective of the WMP is to organize disposal of all wastes generated during construction in an environmentally acceptable manner specially consider the following:

- Health hazards of the project personnel as well as community people should not be occurred;
- Manage the wastes in such a way that environment (specially air, soil, water etc,) will not be polluted;
- Odor means bad smell should not be generated;
- Always friendly environment at the construction sites and construction camps.

3. SITE FOR DISPOSAL OF WASTES

Contractor will select the site for disposal of general wastes at the area within the construction camp at some site which is as much as possible far away from the project workers' and community residents & cultural site.

4. METHOD OF DISPOSAL OF WASTES

4.1 General Waste

Contractor will collect the general wastes in separate waste bin at sources (means organic waste in one bin & inorganic waste in another bin) and dumped at the designated waste disposal site. The Contractor will construct concrete waste disposal site (means concrete floor and wall and covered by shed to avoid, air, bad smell, soil and ground water pollutions. Based on the quantity of general waste (organic & inorganic waste), the following three chambers (rooms) of the concrete disposal site will be constructed by Contractor-

- Two chambers for organic waste;
- One Chamber for inorganic waste.

Just after filling one chamber (say after 6 months) by organic waste through pocket gate, it should be covered by earth (soils) properly & keeps it for about 6 months for converting organic fertilizer for the agricultural lands. After filling 1st chamber by organic waste, disposing of waste will be started for 2nd chamber.

In the same way, inorganic waste will be dumped in the chamber, designated for inorganic waste. Just after filling, these inorganic wastes can be given to the vender free of cost. Contractor collect construction waste separately & dump in to the room at the designated area. Contractor will maintain log book for the measurement of quantity of the waste, disposed every day.

4.2 Construction Waste

- Organize disposal of all wastes generated during construction in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Train and instruct all personnel in waste disposal practices and procedures as a component of the environmental induction process.
- Make sure all containers, drums, and tanks that are used for storage are in good condition and are labeled with expiry date. Any container, drum, or tank that is dented, cracked, or rusted might eventually leak. Check for leakage regularly to identify potential problems before they occur.
- Minimize the production of waste materials by 3R (Reduce, Recycle and Reuse) approach.
- Segregate and reuse or recycle all the wastes, wherever practical.
- Prohibit burning of solid waste.
- Provide reuse containers at each worksite.
- Request suppliers to minimize packaging where practicable.
- Maintain all construction sites in a cleaner, tidy and safe condition and provide and maintain appropriate facilities as temporary storage of all wastes before transportation and final disposal.

4.3 Hazardous Waste

- Transport waste of dangerous goods, which cannot be recycled, to a designated disposal site.
- Provide absorbent and containment material (e.g., absorbent matting) where hazardous materials are used and stored and personnel trained in the correct use.
- Provide protective clothing, safety boots, helmets, masks, gloves, goggles, to the construction personnel, appropriate to materials in use.
- Provide protective clothing, safety boots, helmets, masks, gloves, goggles, to the construction personnel, appropriate to materials in use.
- Avoid the use of material with greater potential for contamination by substituting them with more environmentally friendly materials.
- Organize disposal of all wastes generated during construction in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Train and instruct all personnel in waste disposal practices and procedures as a component of the environmental induction process.

5. INSTITUTIONAL ARRANGEMENT

The Contractor will mainly responsible for environmental monitoring for the waste management. The PIU-BLPA will setup a ‘Waste Management Committee’ with the representatives of the Contractor to effectively disposing the wastes. The committee is also responsible for monitoring procedure for the collection and carrying of wastes without causing any environmental hazards.

Annex H: Accident/Incident Reporting Form

Site Name and References		Site Address	

Details of Person Completing the Form		
Name	Date	
Job Title		

Accident	**Dangerous Occurrence**	**Near Miss**	**Illness**

Details of the Injured Person		
Name of the Injured Person	Age	
Addressed of Injured Person		
Telephone	Occupation	
Employers Name		
Site Engineers Name	Telephone	
Address		

Accident/Incident Details	
Location of Accident/Incident	
What work was occurring at the time of accident/incident	
Summary of the Accident/Incident and the Injury caused (Parts of Body and Severity) (Attached additional pages if necessary)	

Annex I: COVID-19 Awareness campaign

Keep Our Workplace Safe!

Practice good hygiene

Stop hand shakes and use **non-contact greeting methods**

Clean hands at the door and schedule **regular hand washing** reminders

Disinfect surfaces like doorknobs, tables, and desks regularly

Avoid touching your face and cover your coughs and sneezes

Increase ventilation by opening windows or adjusting air conditioning

Limit meetings and non-essential travels

Use **video conferencing** instead of face-to-face meetings

When video calls are not possible, hold your meetings in **well-ventilated rooms and spaces**

Suspend all non-essential travels and trips

Stay home if...

- You are **feeling sick**
- You have a **sick family member** at home

SOURCE: CDC.GOV

Take care of your emotional and mental well-being

Outbreaks are a stressful and anxious time for everyone. We're here to support you! Reach out to hr.unc.edu/totalwellbeing/anytime.

International Labour Organization | BetterWork Bangladesh | IFC International Finance Corporation

করোনাভাইরাস প্রতিরোধে করণীয়

করোনাভাইরাস কীভাবে ছড়ায়

আক্রান্ত ব্যক্তির হাঁচি, কাশির মাধ্যমে বা তাদের সংস্পর্শে আসলে।

করোনাভাইরাসের লক্ষণ

- জ্বর (৯৯ ডিগ্রির বেশি)
- শুকনো কাশি
- শ্বাসকষ্ট
- ক্লান্তি
- কারও কারও শরীর ব্যথা, সর্দি এবং সর্দিতে নাক বন্ধ হওয়া, গলা ব্যথা এবং ডায়রিয়া হতে পারে।

করোনাভাইরাস সংক্রমণের ঝুঁকি রোধে করণীয়

১ ঘন ঘন দুই হাত সাবান ও পানি দিয়ে কমপক্ষে ২০ সেকেন্ড যাবৎ পরিষ্কার করুন। প্রয়োজনে হ্যান্ড স্যানিটাইজার ব্যবহার করতে পারেন।

করোনা আক্রান্ত দেশ থেকে আসা অথবা সংক্রমিত ব্যক্তির সংস্পর্শে আসার ১৪ দিনের মধ্যে করোনার কোনো লক্ষণ দেখা দিলে

২ যেখানে সেখানে কফ ও থুতু ফেলবেন না। হাত দিয়ে নাক, মুখ ও চোখ স্পর্শ থেকে বিরত থাকুন।

৩ হাঁচি-কাশির সময়ে টিস্যু অথবা কাপড় দিয়ে বা বাহুর ভাঁজে নাক-মুখ ঢেকে ফেলুন। ব্যবহৃত টিস্যু ঢাকনাযুক্ত ময়লার পাত্রে ফেলুন ও হাত পরিষ্কার করুন।

- নাক-মুখ ঢাকার মাস্ক ব্যবহার করুন।
- অন্যদের কাছ থেকে অন্তত তিন ফুট দূরে থাকুন।
- আইইডিসিআর-এর হটলাইনে ফোন করুন।

বিদেশফেরত বাংলাদেশিদের জন্য করণীয়

বাড়িতে থাকুন

বিদেশ থেকে আসার পর করোনার কোনো লক্ষণ না থাকলেও ১৪ দিন ঘরের বাইরে যাওয়া থেকে বিরত থাকুন।

নিজেকে আলাদা রাখুন

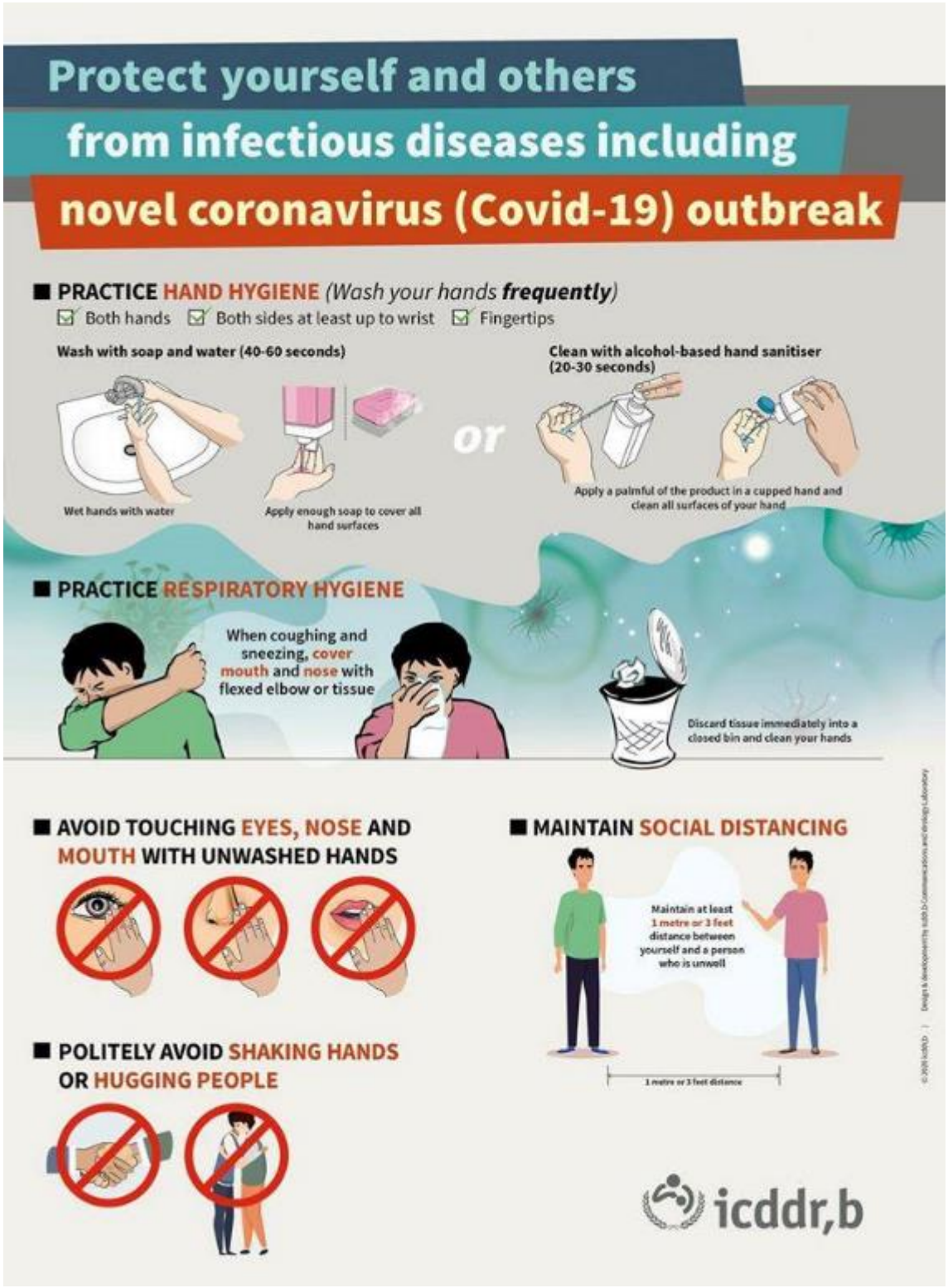
বাড়ির অন্যদের কাছ থেকে আলাদা থাকুন। তা সম্ভব না হলে মাস্ক ব্যবহার করুন এবং অন্যদের কাছ থেকে অন্তত ৩ ফুট দূরে থাকুন। আলাদা বিছানা, বিছানার চাদর, বাসনপত্র, তোয়ালে এবং পোশাক ব্যবহার করুন।

জনসমাগম এড়িয়ে চলুন

জনসমাগম (বাজার, সামাজিক অনুষ্ঠান, ধর্মীয় জমায়েত, খেলাধুলা, সভা, সিনেমা হল, মেলা ইত্যাদি) এবং গণপরিবহন এড়িয়ে চলুন।

করোনার লক্ষণ দেখা দিলে আইইডিসিআর-এর হটলাইনে ফোন করুন

৩৩৩, ০১৯৪৪৩৩৩২২২ ও স্বাস্থ্য বাতায়ন-১৬২৬৩


Protect yourself and others
from infectious diseases including
novel coronavirus (Covid-19) outbreak
PRACTICE HAND HYGIENE (Wash your hands frequently)
Both hands
Both sides at least up to wrist
Fingertips
Wash with soap and water (40-60 seconds)
Wet hands with water
Apply enough soap to cover all hand surfaces
or
Clean with alcohol-based hand sanitiser (20-30 seconds)
Apply a palmful of the product in a cupped hand and clean all surfaces of your hand
PRACTICE RESPIRATORY HYGIENE
When coughing and sneezing, cover mouth and nose with flexed elbow or tissue
Discard tissue immediately into a closed bin and clean your hands
AVOID TOUCHING EYES, NOSE AND MOUTH WITH UNWASHED HANDS
MAINTAIN SOCIAL DISTANCING
Maintain at least 1 metre or 3 feet distance between yourself and a person who is unwell
1 metre or 3 feet distance
POLITELY AVOID SHAKING HANDS OR HUGGING PEOPLE
icddr,b