



**BANGLADESH LAND PORT AUTHORITY**  
**Bangladesh Regional Connectivity Project 1**

**IDA Credit No. 6002-BD**



**Environmental & Social Impact Assessment (ESIA)**  
**For**  
**Proposed Extension Work of Ramgarh Land Port**

**Final Report**

**January, 2024**

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## **ACRONYMS AND ABBREVIATIONS**

GOB	Government of Bangladesh
OP	Operational Policy
BP	Bank Policy
BGB	Boarder Guard Bangladesh
BNBC	Bangladesh National Building Code
DTW	Deep Tube well
DPHE	Department of Public Health Engineering
PAPs	Project Affected Persons
DSC	Design Supervision Consultant
DPP	Development Project Proposal
RDPP	Revised Development Project Proposal
FGD	Focus Group Discussion
KII	Key Informant Interview
BoQ	Bill of Quantity
DTW	Deep Tubewell
DPHE	Department of Public Health Engineering

## **1 INTRODUCTION**

### **1.1 Background**

1. The Government of Bangladesh has started a project named “Bangladesh Regional Connectivity Project-1 (BRCP-1)” which is jointly implemented by the Bangladesh Land Port Authority (BLPA), National Board of Revenue (NBR) and Ministry of Commerce (MoC). As per Revised DPP the components of the BRCP-1 are Development of Sheola, Bholaganj, Ramgarh Land Ports and Up-grading of Security System of Benapole Land Port. The project started (effective date of IDA Credit) from 8 January 2018 and revised completion date is 30 June 2025 (2nd RDPP).

2. The third land port under consideration by GOB as a pilot for a co-located shared facility with Government of India is located at Ramgarh in Chittagong Hill Tracts, opposite the town of Sabroom, Tripura State, India. Likewise, the Government of India has also designated this border crossing as a strategic priority and has committed to building and operating an Integrated Check Post at this location. Both governments were initially discussing the possibility of a co-located facility on the Bangladesh side of the border. Afterwards, it was also decided to facilitate some other facilities like traditional ports.

3. Initially, 10.00 acres of land has been acquired. Accordingly, site development work as well as customs & immigration building was constructed. However, for considering future demand a masterplan has been prepared that includes additional facilities like i) Sufficient greenery area; ii) For BGB Setup area; iii) International Terminal Building with open space facilities; iv) Bus Ticket Counter; v) Separate traffic flow system inside the port area, which will not interference the existing traffic flow to Ramgarh, Khagrachhari from Chattogram and Dhaka and other parts of the country; vi) Guest House Facilities for visitors and government agencies; vii) Medical Centre with isolation area; viii) Separate weighbridges system for loaded and empty trucks; ix) Indian empty truck parking area; x) Bangladeshi export and empty truck parking area; and xi) Wider (multiple lane) roadway for non-interference traffic movement inside and outside the port area. Thus, BLPA intends to acquire 10.14 acres of land additionally. In this context, to incorporate the related risks and impacts along mitigation and compensation measures, this ESIA is prepared.

### **1.2 Scope of Work and Study Objectives**

4. The existing Environmental and Social Impact Assessment for Ramgarh Land Port is still valid. This ESIA is an addendum to the existing ESIA and does not reproduce the same information. Therefore, this ESIA needs to be read in conjunction with the existing ESIA. This ESIA however covers the requirements for the proposed extension activities. It is planned to have a brief study with the inclusion of the key and mandatory contents in the main report and refereeing the supplementary contents in the appendix (updated surface and ground water quality report) & existing ESIA Report.

5. The specific objectives of the study are:

- Establishing the environmental and social baseline in the proposed (extended) area and identifying any significant environmental and social issue;
- To predict environmental, social, economic, and cultural consequences of a proposed activity and plans to mitigate any adverse impacts resulting from the proposed activities;
- Developing appropriate management plans for implementing monitoring and reporting of the mitigation and enhancement measures suggested;
- Provides opportunities for the involvement of the stakeholders;
- To provide a structured budget and code of practices in the bid documents for the environmental and social management.

### 1.3 Methodology Adopted for this ESIA

6. The study methodology comprised the following activities:
  - Desktop Study;
  - Field Investigations and Data Collection;
  - Data Analysis and Report Writing.
7. Desktop studies mainly focus on accumulation of relevant project information-rationale of the project, project intervention and activities, location, length, size and magnitude of the project, proposed schedule for project implementation, and description of project activities, materials, resources, and equipment to be needed for execution of the activities etc.
8. Field Investigation and Data Collection include:
  - Environmental data collection through sampling & laboratory analysis - surface water quality analysis and ground water quality analysis;
  - During the previous ESIA study ambient air quality in the project area was measured within the allowable limit. As there is no more activity in the land port, there are no sources of further air pollution within the project influence area. That's why no further air quality analysis is required.
  - Ecological survey was performed through listing of the Flora & Fauna within approximately 500m of the proposed area;
  - Identification of important environmental features (IEFs) within 500 meters of the proposed area -affected/ not affected but have direct/indirect impact);
  - Household survey of the landowners/PAPs to be affected due to land acquisition;
  - FGDs, KIIs and free, prior, and informed consultation were conducted by the study team.
9. Data Analysis and Report Writing: The data and information collected from all the sources (literature review, secondary and primary data, public consultation) were analysed to describe the existing environmental and social setting of the project area, to identify the potential positive and negative impacts of the proposed project, as well as to provide preliminary suggestions for mitigation measures.

## 2 Legal and Policy Framework

### 2.1 General

10. An Environmental Management Framework (EMF) and Resettlement Policy Framework (RPF) have been adopted by the project for ensuring the requirements of the country's legal frameworks as well as World Bank's guidelines in the project. As per EMF and RPF, the project needs to assess the impacts induced from the proposed extension and from the acquisition of the land. Any kinds of impacts including livelihood impacts due to land acquisition needs to be addressed properly and then measures need to be taken accordingly.

### 2.2 Relevant National Legal Instruments

11. Table 1 summarizes national legal instruments that will have relevance to the project with respect to the social and environment considerations. The ESIA is prepared in compliance with these national policies.

**Table 1: Summary of Government Laws, Regulations Applicable to the Project**

<b>Laws, Regulations and Standards/ Legal Instruments</b>	<b>Brief Description/Key Features</b>	<b>Responsible Agency</b>	<b>Relevance</b>
Environment Conservation Act 1995	Provides for the conservation of environment, improvement of environmental standards and control environmental pollution. This act provides for (i) remedial measures for injury to ecosystem; (ii) discharge of environmental pollutants; (iii) inspection of any activity for testing any equipment.	Ministry of Environment and Forest Department of Environment [DOE]	The provisions of the act apply to the construction and operational stages.
Environment Conservation Rules 2023	The Rules outline the processes and requirements of environmental clearances for specific type of projects. (i) Green, (ii) Yellow, (iii) Orange, and (iv) Red. The rules specify the procedures for issuing ECC for the various categories of projects.	Ministry of Environment and Forest Department of Environment [DOE]	Previous development of the Ramgarh land port was considered as "Orange B" and accordingly ECC obtained from DoE. As per the Environment Conservation Rules 2023 it falls as "Orange". Following the ECR 2023 renewal of ECC for development of Ramgarh land port as "Orange" obtained in 2023.
Bangladesh Labour Act 2006	The Bangladesh Labour Act, 2006 provides the guidance of employer's extent of responsibility and workmen's extent of right to get compensation in case of injury by accident while working.	Ministry of Labour	Provides for safety of work force during construction and operation & maintenance period.
The National Water Policy (1999)	<ul style="list-style-type: none"> <li>• Protection and restoration of water resources;</li> <li>• Protection of water quality including strengthening regulations concerning industrial effluents;</li> <li>• Participation of local communities in water sector development.</li> </ul>	Ministry of Water Resources	Discharge of the sewage wastes and wastewater from the construction activities especially from labour camp and during operation may degrade the quality of the surface water in the influence area of the project.
National Biodiversity Strategy and Action Plan (2004)	<ul style="list-style-type: none"> <li>• Conserve and restore the biodiversity;</li> <li>• Strategy and Action - Maintain and improve environmental stability of ecosystems.</li> </ul>	Ministry of Environment and Forest (MOEF)	Discharge of the sewage wastes and wastewater from the construction activities especially from labour camp and during operation may degrade the quality of the surface water in the influence area of the project.
Noise Pollution (Control) Rules, 2006	Provides mechanism for bringing noise complaints for adjudication of injury to the local authority	Department of Environment [DOE]	The provisions of the rules apply to the construction and operational stages of the project to minimize disturbances from the noise.
Environment Court Act, 2000 and subsequent amendments in 2002	To facilitate environment related legal proceedings	Environment and Forest (MOEF)	To facilitate legal proceedings of the project in case of any corruption for the land acquisition and resettlement. GOB has given highest priority to environment pollution and passed „Environment Court Act, 2000 for completing environment related legal proceedings effectively
National Land Transport Policy, 2004	<ul style="list-style-type: none"> <li>• Reduction of pollution from all kinds of vehicles for environmental protection;</li> <li>• Institutional strengthening of the transport sector</li> </ul>	Ministry of Communication	The provisions of the rules apply to the construction and operational stages of the project because transportation of the equipment and materials are required for the construction &

Laws, Regulations and Standards/ Legal Instruments	Brief Description/Key Features	Responsible Agency	Relevance
			maintenance work.
The Vehicle Act, 1927 The Motor Vehicles Ordinance, 1983 The Bengal Motor Vehicle Rules, 1940	<ul style="list-style-type: none"> <li>• Exhaust emissions;</li> <li>• Vehicular air and noise pollution;</li> <li>• Road/traffic safety;</li> <li>• Vehicle licensing and registration;</li> <li>• Fitness of motor vehicles;</li> <li>• Projecting bylaws.</li> </ul>	Bangladesh Road Transport Authority	The provisions of the rules apply to the construction and operational stages of the project due to transportation of the equipment and materials by project vehicles for the construction & maintenance work.
Water Supply and Sanitation Act, 1996	Management and Control of water supply and sanitation in urban areas	Ministry of Local Government, Rural Development and Cooperatives	The provisions of the rules apply to the construction and operational stages of the project because water supply and sanitation need to be provided.
National Land Use Policy, 2001	Land use policy for agriculture (crop production, fisheries and livestock), housing, forestry, industrialization, railways and roads, tea and rubber. The plan basically identifies land use constraints in all these sectors.	Ministry of Land	The provisions of the rules apply for identifying the project location.
The Acquisition and Requisition of Immovable Property Act, 2017	The principal legal instrument governing land acquisition in Bangladesh is Acquisition and Requisition of Immovable Property Act, 2017 (ARIPA 2017).	Ministry of Land/Deputy Commissioner	The ARIPA 2017 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 for the acquisition of properties belonging to religious organizations like mosques, temples, pagodas and graveyards if they are acquired for public interest. The ARIPA, however, excluded the acquisition of properties used by the public for the purpose of religious worship, graveyards and cremation grounds. The Act stipulates certain safeguards for the landowners and provides for payment of "fair value" for the properties acquired.

12. As per DoE ECR-2023 Schedule of Category it is a project of "Orange" category. Renewal of ECC from DOE is obtained as per ECR-2023. Hence a full scale ESIA is not required.

### 2.3 World Bank Environmental and Social Safeguard Policies

13. The OP/BP 4.01 Environmental Assessment triggers for this project. Due to land acquisition, OP/BP 4.12 Involuntary Resettlement is triggered. There are some indigenous people. So social safeguards policies OP/BP 4.10 Indigenous People trigger for this project. In addition to the OP/BP 4.01 and OP/BP 4.10, the labour influx guideline 2016 is also application for this project.



## 2.4 Environmental, Health and Safety Guidelines

14. The Environment, Health, and Safety (EHS) Guidelines<sup>1</sup> contain the performance levels and measures that are generally considered to be achievable in new facilities or project by existing technology at reasonable costs. In addition, there are also industry specific EHS guidelines.

15. BLPA, the implementing agency is committed protecting the health and safety of everybody involved with their activities, the people who meet their operations and the physical and natural environment in which they work. The requirements of health, safety and environmental standards and strive to:

- Ensure that all operations comply with applicable health, safety and environmental laws and regulations;
- Implement controls to protect all personnel involved in activities to prevent pollution and to protect bio-diversity;
- Provide health, safety and environmental training to employees and actively promote awareness of health, safety and environmental issues;
- Ensure that contractors are aware of their policies and standards and where necessary, work with their contractors to raise their standards to meet them;
- Foster a culture where accidents and incidents are reported and investigated, and the lessons learned are shared throughout the organization;
- Monitor performance and conduct regular audits to ensure controls are effective and that health, safety and environmental aspirations are being achieved;
- Set objectives and targets for improving health, safety and environmental performance and monitor and report openly on performance;
- Work with Government and regulatory bodies in the formulation or improvement of laws, policies, regulations and procedures aimed at protecting health, safety and the environment;
- Consult with and respond to the concerns of other stakeholders on health, safety, and environmental performance.

## 3 PROJECT DESCRIPTION

### 3.1 Setting and Current Situation of the Proposed Area

16. Initially 10.00 acres of land was acquired, and in this area, an International Passenger and Immigration Building was constructed. RAP was prepared for that portion of acquisition, approved, and implemented as well. Compensation to the Tittle-Holders and Non-Tittle Holders is completed with satisfaction. A masterplan was prepared including the initially acquired land providing the adequate facilities. As per the masterplan more 10.14 acres of land are proposed for the extension is in between the immigration building and Govt. Primary School. For the acquisition of 10.14 acres of land, a RAP is being prepared and will be implemented prior to the civil work. The proposed area consists of mixed land-use pattern-residential houses, homestead gardening and few agricultural lands. As per the existing governmental law compensation against the existing households and other structures will be made. There are number of trees observed in the proposed area. Some of them will be remain as it is and some of the (minor size) will be replant as per masterplan at where applicable. Some of them may be removed as per requirement. Compensation will be made as per the existing governmental rules. The location map (Google earth view) is shown in the Figure 1 and the current site condition is shown in the following Photographs 1.

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<sup>1</sup> EHS Guidelines available at:  
<http://www.ifc.org/wps/wcm/connect/554e8d80488658e4b76af76a6515bb18/Final%2B-%2BGeneral%2BEHS%2BGuidelines.pdf?MOD=AJPERES>



Figure 1: Location map of the Project with proposed area for extension







**Photograph 1:** Current situation of the proposed area for extension

### 3.2 The Envisaged Project Activities

17. As per the Master Plan of Ramgarh Land Port (Figure 2), International Terminal Building with open space facilities, Warehouse, Guest Housing facilities for visitors and Governmental agencies, Bangladeshi Export and Empty truck parking area, Indian Empty truck parking area, Security staff's office, medical centre, Dormitory building, Port building, wider roadway and adequate greenery area are included in the area proposed for extension. Details with covered and useable area are given in the following table -2.

**Table 2: List utilities and covered area**

SN	Name of the Structures/Components	Unit	Quantity (Area)
1	Port Building	Sqm	632.37
2	Warehouse	Sqm	609.63
3	Medical Centre with Isolation area	Sqm	581.14
4	Bangladeshi Export and Empty truck parking area	Sqm	6,751.83
5	Indian Empty truck parking area	Sqm	11,030.83
6	Dormitory building	Sqm	332.89
7	Guest House Facilities	Sqm	787.48
8	Security Facilities	Sqm	356.77
9	Toilet Complex	Sqm	424.95
10	Roadway Network	Sqm	10,266.83
11	Greenery Area	Sqm	9,275.32



18. It is planned to integrate all the different departments (i.e. exporters, importers, C&F Agents, transport associations, labors, customs, quarantines, BGB and other port users) under one roof.

19. The general activities of the project include: construction of the semi-pucca site office and construction of the labour shed. Specific activities include: site clearing work, land development, providing lay-out of the structures, foundation i.e. substructure works of the structures, earth filling work as per requirement & compaction of earth, mass reinforcement cements concrete work in building structures, superstructure works, fitting and fixing of the plumbing and electrical accessories etc. Execution of the activities are associated to the environmental impacts.

20. The materials and resources to be used for the key activities: soil in earth work, sand, stone chips, brick chips, glass, cement, bricks, concrete, tiles, reinforcement, sanitary and electrical accessories. The major equipment to be used for the implementation of the project: hammer, steel/concrete hammer, excavator, concrete mixer machine, mechanical vibrator machine, steel cutter, steel shutter, dump truck etc.

21. Design, drawing, cost estimation and bid documents are already completed. Tender documents have also been prepared with included the ESMP and required ESMP items in the BoQ following the previous approved ESIA of Ramgarh land port. The tentative civil works schedule is included as per the following table-3 below.

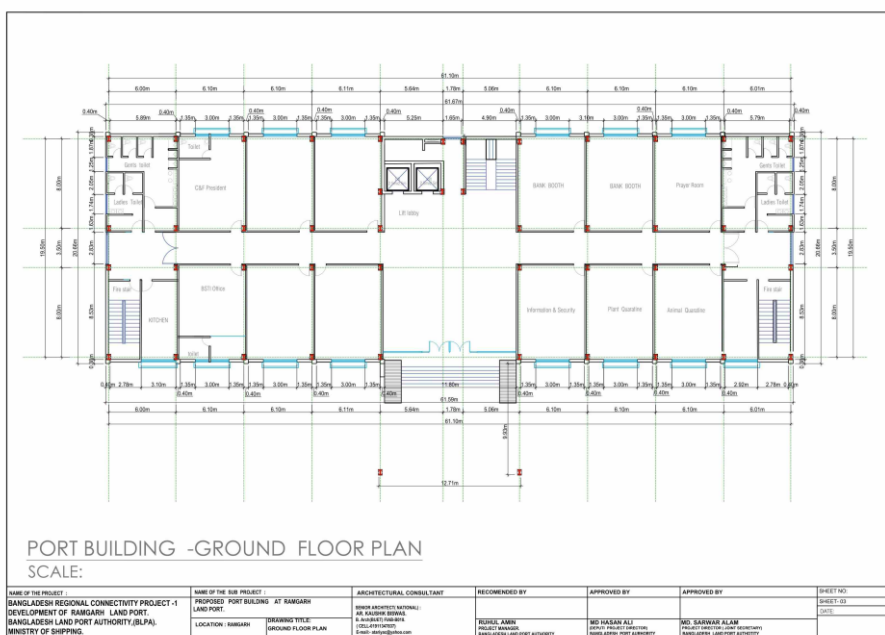


Figure 3: Port Building with Layout Plan of Ramgarh Land Port

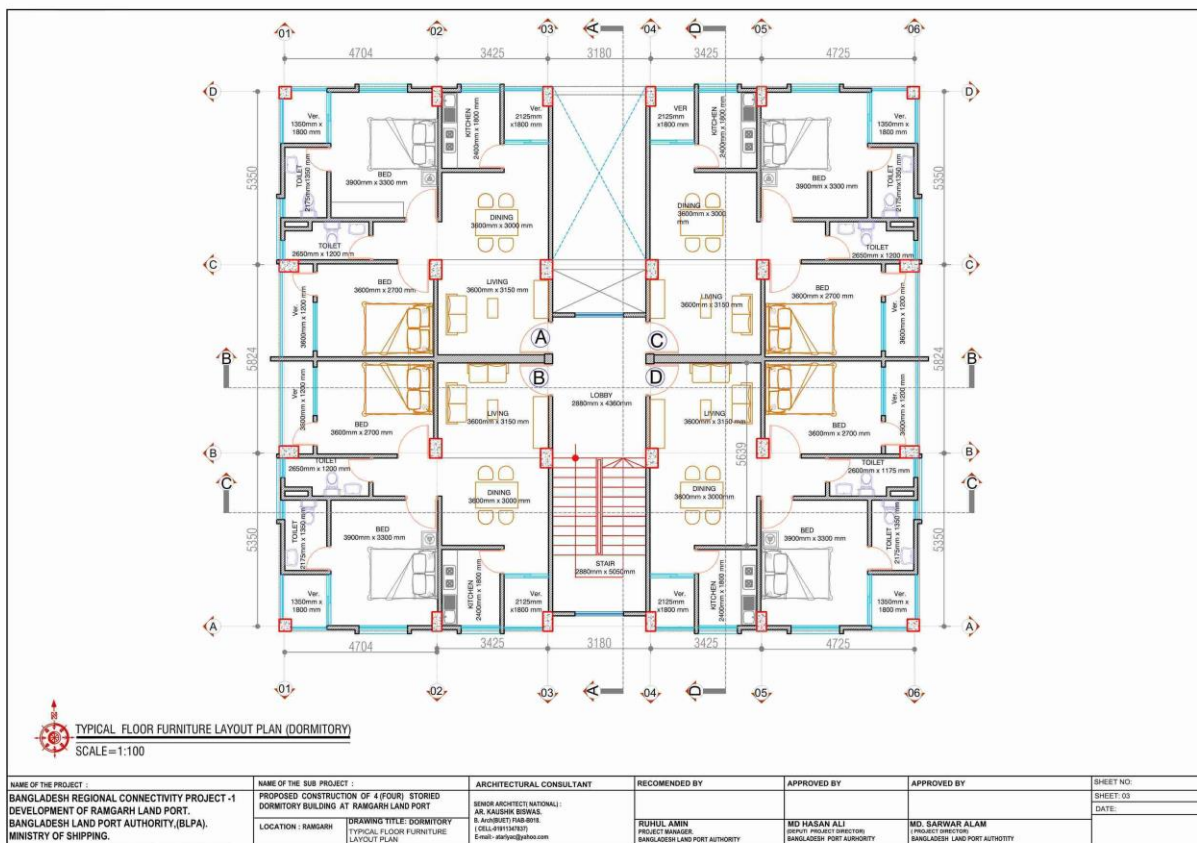
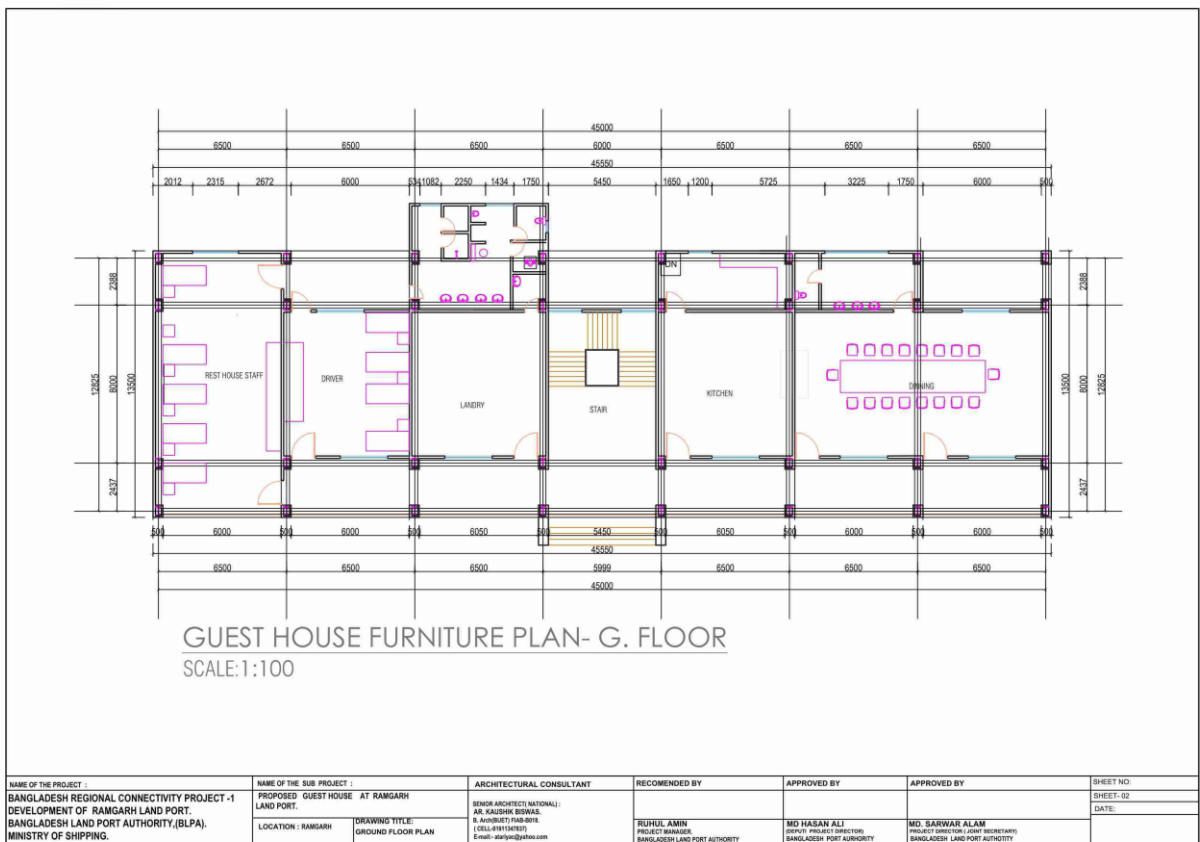


Figure 4: Dormitory Building with Layout Plan of Ramgarh Land Port





**Figure 5: Guest House Building with Layout Plan of Ramgarh Land Port**

Item	2024												2025					
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
Land Development	■	■	■	■	■	■												
RCC Pavement							■	■	■	■	■	■	■	■				
Permanent Boundary Wall					■	■	■	■	■	■	■	■	■	■				
Internal Road Network							■	■	■	■	■	■	■	■	■	■		
Garbage Bin						■	■	■	■									
Land Scaping with walkways											■	■	■	■	■	■	■	
One stop Port building					■	■	■	■	■	■	■	■	■	■	■	■	■	■
Warehouse								■	■	■	■	■	■	■	■	■	■	■
Parking Area								■	■	■	■	■	■	■	■	■	■	■
Truck Parking Area								■	■	■	■	■	■	■	■	■	■	■
Facilities for Drivers and Labour											■	■	■	■	■	■	■	■
Border Check Post													■	■	■	■	■	■
Watch Tower													■	■	■	■	■	■
Toilet Complex											■	■	■	■	■	■	■	■
Passenger Terminal Building							■	■	■	■	■	■	■	■	■	■	■	■
Water Supply System, DTW with Pump House											■	■	■	■	■	■	■	■
Electrical works with Substation											■	■	■	■	■	■	■	■
Internal Drainage works								■	■	■	■	■	■	■	■	■	■	■
Installation of Weighbridge													■	■	■	■	■	■
IT Solution System with networking													■	■	■	■	■	■
Security system, CCTV, Alarm etc.													■	■	■	■	■	■
Fire Detection & Protection System etc.													■	■	■	■	■	■
Social Impact Mitigation													■	■	■	■	■	■
Environmental Impact Mitigation			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

**Table 3: Tentative Work Schedule**



22. The anticipated labor utilization for the various phases of the project is as follows, encompassing both local and non-local workers, along with a significant percentage (about 10%) of female workers:

- Mobilization: 20 workers (including both local and non-local workers)
- Foundation work/substructure work: 100 workers (including both local and non-local workers)
- Superstructure work (column, beam and slab construction): 100 workers (including both local and non-local workers)
- Sanitary, plumbing, electrical work and other finishing works: 50 workers (including both local and non-local workers)
- Other ancillary tasks: 50 workers (including both local and non-local workers)
- Female Workers: about 10% of the total workforce across all phases

23. Most of the skilled workers are migrant and non-local to be engaged from different areas of the country. It is anticipated that about 80% of the total workforces are non-local. The provided numbers indicate the approximate labor requirements for various tasks and activities during each phase of the project. These numbers can vary based on the project's specific requirements, timeline, and other factors. It is important to regularly assess and adjust labor requirements as the project progresses to ensure optimal resource allocation and project success.

## 4 ENVIRONMENTAL AND SOCIAL BASELINE

### 4.1 Environmental Setting

24. The Table 4 illustrate the summary of various environmental settings of the project site.

**Table 4:** Existing Environmental Settings

Particulars	Details	
<b>Location</b>	Mahamuni Para, Word-9, Ramgarh Pourashava of Ramgarh Upazila under Khagrachari District	
<b>Total Area</b>	10.365 acres	
<b>Site Elevation</b>	Around 19.5 m from MSL	
<b>Surroundings of the project site</b>	North	Customs and Immigration Building
	West	Agricultural land, Feni River and India Border
	East	Ramgarh-Khagrachari Road
	South	Govt. primary school
<b>Agro ecological Zone</b>	Northern and Eastern Hills	
<b>Physiography</b>	Northern and Eastern hills region	
<b>Geology</b>	Brown Hill soil is the predominant general soil type of the area. Organic matter content and general fertility level is low.	
<b>Agricultural Activity</b>	Main crops of Ramgarh Upazila are paddy, sweet potato, ginger, turmeric, sugarcane, bamboo, vegetables and Extinct or nearly extinct crops are local verities of paddy, Sesame, kaun, mustard.	
<b>Flood</b>	No history of flood.	
<b>Climate and Meteorology</b>	<p>The Ramgarh Upazila of Khagrachari District falls in the South-Eastern Climate Zone. The annual average temperature of the Khagrachari district varies from a maximum of 34.6°C to minimum 13°C. The period from February to April is marked by a continuous increase in the temperatures. April is the hottest month of the year. With the onset of monsoon by mid-May, the temperatures descend slightly. January is the coolest month of the year.</p> <p>The annual average relative humidity in the project area is around 79%. Humidity fluctuations are stable every year in project areas in view of seasonal humidity change. The difference in the average humidity between respective months is rather small.</p> <p>The average annual rainfall of the district is 3031 mm. About 80% of the precipitation occurs during five monsoon months (May to September). Minimum precipitations are recorded during the month of November to February whereas average showering does occur in March, April and October.</p>	
<b>Seismic Zone</b>	Zone III, Severe (Seismic co-efficient is 0.28g) (BNBC, 2015, Final draft)	
<b>Cyclone Effect</b>	The proposed project is located in a cyclone risk free area. But the area is fall under high wind area due to cyclone.	
<b>Salinity Intrusion</b>	Project area is free from salinity. Because of the higher position from sea level there is no possibility of salinity to be found in water or soil of the project area.	
<b>River Erosion</b>	The proposed project area is free from risk of River erosion	
<b>Drainage Congestion</b>	Project location is mainly hilly area with slope. Besides, there is Feni River	

Particulars	Details
<b>and Water Logging</b>	on the western side of the project. So, naturally the area is well drained and there is very little chance of water congestion of this area. If proper drainage system is developed, the inside of the project area will be free from water congestion.
<b>Forests</b>	There are some trees, vegetation at the proposed area for extension
<b>Major Water Body</b>	Feni River
<b>Ecologically Critical Area</b>	None
<b>Environmental and Social Hotspots</b>	River, homestead and natural vegetation, educational institute, religious and historical sites etc.

## 4.2 Ambient Air Quality

25. During previous ESIA Study and environmental monitoring, ambient air quality of the project area has been measured for the parameters SPM, PM<sub>10</sub>, PM<sub>2.5</sub>, CO, CO<sub>2</sub>, NO<sub>2</sub>, H<sub>2</sub>O, SO<sub>2</sub>, NO, H<sub>2</sub>S, VOC, O<sub>2</sub>. It has been observed that the value of CO, CO<sub>2</sub>, NO<sub>2</sub>, CH<sub>2</sub>O, SO<sub>2</sub>, NO, H<sub>2</sub>S, and VOC & O<sub>2</sub> are within maximum permissible limit of Bangladesh Air Pollution Rules 2022, WHO, US EPA and OSHA guidelines. Except vehicular traffic and traffic induced impact on the degradation of the air quality; there are no additional sources of air pollution within the project influence area. Air quality seems okay and still within the range of the permissible limits and does not necessitate further analysis because the site situation is remaining unchanged. Additional vehicular movement due to land port activity are not yet started, only the general vehicular movement from Boraihat to Ramgarh to Khagrachhari are passing by the side of the land port area.

## 4.3 Ambient Noise Quality

26. Except vehicular traffic and traffic induced impact on the degradation of the noise quality; there are no sources of noise pollution within the project influence area. During previous ESIA study and environmental monitoring, noise measurement was conducted. It has been observed that the noise level in the proposed area is within the range of Bangladesh Environmental Quality Standard as well as WB General EHS Guidelines, 2007.

## 4.4 Water Quality

27. During, the previous/main ESIA study and during first phase construction, sampling and laboratory analysis was conducted for both surface water and ground water. It has been observed that pH, EC, TDS, As, Fe, Total Alkalinity, Total Hardness for both surface water and drinking water sample is within the range of Bangladesh Environmental Quality Standard and International Quality Standards.

28. There are no likely major industrial pollution sources that degrade the surface water quality and ground water quality in the study area. Any pollution load from the upstream of the Feni River may influence the degradation of the water quality in the study area. Hence, during this ESIA study, sampling and laboratory analysis was conducted by the study team for both surface water and ground water. It has been observed that pH, EC, TDS, As, Fe, Total Alkalinity, Total Hardness, PO<sub>4</sub>, and Ca<sup>+</sup> & Mg for both surface water and drinking water sample is within the range of Bangladesh Environmental Quality Standard and International Quality Standards like WHO Standards.

29. Surface water from nearby Feni River and ground water (DTW) quality near the project area is further assessed on 19 June 2023 through sampling and laboratory analysis in DPHE. The test results are given in the Table 5 & 6.

**Table 5: Surface Water Analysis Result**

Water Quality Parameters	Bangladesh Standard	IFC Standard	Unit	Concentration present	Method of analysis	LOQ
Ammonia	0.5	-	mg/l	0.19	UVS	0.10
Biological Oxygen Demand (BOD)	0.2	30	mg/l	32	5 days incubation	0.1
Chemical Oxygen Demand (COD)	4.0	125	mg/l	136	CRM	-
Dissolved Oxygen (DO)	6.0	-	mg/l	2.65	Multi-meter	-
EC	-	-	μS/cm	690	Multi-meter	-
Nitrogen (Nitrate)	10.0	-	Mg/l	2.1	UVS	-
pH	6.5-8.5	-	-	7.2	pH meter	-
Phosphate	6.0	6-9	mg/l	13.3	UVS	0.10
Total Dissolved Solids (TDS)	1000	-	mg/l	345	Multi-meter	-
Total Suspended Solids (TSS)	10	50	mg/l	2	Gravimetric Method	-
Turbidity	10	-	NTU	8.4	Turbidity Meter	-

30. Analysis of the surface water carried out in this study showed that the measured parameters except BOD, COD, and Phosphate satisfy the IFC surface water standard.

**Table 6: Ground Water Quality Data**

Water Quality Parameters	Bangladesh Standard	WHO Standard	Concentration Present	Unit	Method of analysis	LOQ
Alkalinity	-	-	44	mg/l	Titrimetric	-
Arsenic (As)	0.05	0.01	0.001	mg/l	AAS	0.001
Chloride	150-600	200-300	52	mg/l	Titrimetric	-
EC	-	-	517	μS/cm	Multi-meter	-
Iron (Fe)	0.3-1	0.3	0.26	mg/l	AAS	0.05
Lead (Pb)	0.05	0.01	0.002		AAS	
Magnesium (Mg)	30-35	0.4	20	mg/l	AAS	0.03
pH	6.5-8.5	<8	7.5	-	pH meter	-
Total Dissolved Solids (TDS)	1000	-	264	mg/l	Multi-meter	-

31. From the above analysis it is discernible that, all the parameters conform to the Bangladesh standards except presence of Magnesium (Mg) over the WHO standard.

#### 4.5 Ecological Resources

32. Ecological survey was comprehensively performed during the main ESIA study and aquatic and terrestrial species of flora & fauna were presented in a tabular form. The influence area of the proposed extension project is like the main project. Hence, to avoid data repetition ecological survey was only focus the proposed area to be used for extension work.

33. The study area has fallen under bio-ecological zone of Chattogram hills and the CHTs. The project influence area occupies terrestrial as well as aquatic ecosystems. There are various species of planted trees in the homestead garden in the proposed area. There are various species of bush, shrub, and herbs as well. There are different types of vegetable are also planted in the homestead gardens. There are 1296 trees of different varieties and sizes are counted during the ecological survey in the proposed area which will be affected due to the extension work. Among them, 808 are large, 488 mediums including of timber, fruit, and medicinal trees. During implementation of the

different component some of the trees will be preserved with necessary protection at base area. Some of the small size trees (as possible) will be replanted according to the masterplan.

#### 4.6 Socio-economic Profile of the PAPs

34. A household survey of the project affected persons was conducted by the study team. This section summarizes the household survey for the important socio-economic parameters. Further details of the socio-economic profile are given in the RAP.

##### **Demography**

35. There are 52 households and 5 business structures to be affected due to land acquisition comprising of 256 family members. Among them, 135 are male members and 121 are female members. The household size is 4.92. The male-female sex ratio is 112, referring to 112 males per 100 females. The following table shows age-wise distribution of affected people.

**Table 7:** Distribution of affected people by age category

Age Group	Male		Female		Total	
	No.	%	No.	%	No.	%
Under 15	31	23	26	21	57	22
15-29	29	22	36	30	65	25
30-44	41	31	28	23	69	27
45-59	20	15	21	17	41	16
Above 60	13	10	11	9	24	9
Total	134	100	122	100	256	100

Source: Census, 2023

##### **Ethnicity**

36. Out of the affected households, 26 are tribal and 26 are Bangali. Among the Tribal HHs, 24 belongs to the Marma community while Tripura follow the Hinduism.

##### **Land ownership and control**

37. All land under the acquisition is privately owned. Alongside the Feni River there is also khash land. These people also often cultivate some vegetables in this khash land.

38. The land rights control and transfer depend on the endorsement of the local tribal Headman. Some of the landowners feels that the land transfer process takes longer time, people transfer land through stamp paper called haatdolil. This document is locally accepted as a legal document.

##### **Livelihoods**

39. The following table shows that 17% are working in different sectors as salaried employees. Agriculture is the second most dominant (14%) occupation, followed by 10% in the business sector. Women are largely involved in household activities.

**Table 8:** Household Members Involved in Occupation

Type of Main Occupation	Involvement of Household Members in Occupation	
	No.	%
Agriculture	22	14
Teacher	7	4
Expatriate	2	1
Salaried employee	26	17
Housewife	64	41
Business	16	10
Day labour	9	6
Driver	4	3
Carpenter	1	1
Rickshaw/Van puller	1	1
Unemployed	4	3
<b>Total</b>	<b>156</b>	<b>100</b>

Source: Census, 2023

**Table 9:** Gender-segregated Distribution of Household Members Involved in Occupation

Type of Main Occupation	Male		Female	
	No.	%	No.	%
Agriculture	19	23	3	4
Teacher	5	6	2	3
Expatriate	1	1	1	1
Salaried employee	21	26	5	7
Housewife	1	1	63	84
Business	16	20	-	-
Day labour	8	10	1	1
Driver	4	5	-	-
Carpenter	1	1	-	-
Rickshaw/Van puller	1	1	-	-
Unemployed	4	5	-	-
<b>Total</b>	<b>81</b>	<b>100</b>	<b>75</b>	<b>100</b>

Source: Census, 2023

### **Income and expenditure**

40. Based on the international poverty line<sup>2</sup> of 1.90\$ per day, **no households are found below the poverty line**. 24% of households were found to have income of below BDT 10,000 monthly income. Income of most of the households belongs to ranges BDT 10,000 to 30,000.

**Table 10:** Distribution of earning member by income ranges

Income Range	No. of households	Percentage
<10000	14	27
10000-30000	28	54
30000 Above	10	19
<b>Total</b>	<b>52</b>	<b>100</b>

Source: Census, 2023

<sup>2</sup><https://www.worldbank.org/en/results/2018/11/15/bangladesh-reducing-poverty-and-sharing-prosperity>

### **Housing condition and amenities**

41. Affected households are kutcha, semi-pucca, and pucca. Households have basic amenities such as sanitary latrines with separate septic tanks, grid electricity connection and solar electricity facility. Households also use gas as cooking fuel.

### **Education**

42. The status of educational attainment of male and female is almost similar. 3 male members (3%) and 8 female members (8%) were found illiterate. On the other hand, three male members and one female member were found are pursuing their postgraduate level studies. The tribal people are very knowledgeable in Bangla. So, they can speak in Bangla fluently.

**Table 11: Status of Educational Attainment of Household Members (gender-segregated)**

Education Level	Male		Female		Total	
	No.	%	No.	%	No.	%
Primary	20	21	22	23	42	22
Class 6 to 10	24	25	28	29	52	27
SSC	12	12	10	10	22	11
HSC	12	12	13	13	25	13
BA/undergraduate	23	24	15	15	38	20
MA/Masters	3	3	1	1	4	2
Illiterate	3	3	8	8	11	6
Total	97	100	97	100	194	100

Source: Census, 2023

### **Marital status**

43. The following table shows that the number of married male and female is higher than that of unmarried members. Besides, there are 5 widows and 4 widower members.

**Table 12: Marital Status of Household Members**

Marital Status	Male		Female	
	No.	%	No.	%
Married	73	56	69	58
Unmarried	57	44	42	35
Widow	-	-	5	4
Widower	-	-	4	3
Total	130	100	120	100

Source: Census, 2023

## **5 Anticipated Environmental and Social Impacts**

44. The environmental impacts during construction phase due to the proposed extension are mainly from sitting of additional construction camps, tree cutting and clearing of vegetation, site preparation including land development, excavation and backfilling to some extents, hauling of earth materials and wastes, transportation, handling and storage and pollution from the additional construction materials, construction of sub-structure and super-structure works and associated impacts on degradation of air, noise & water quality and waste generation and induced impact.

45. In the main ESIA Study, impacts on air quality, noise, waste generation, water quality, occupational & community health and safety, traffic congestion and other socio-economic impacts

are discussed. Environmental and social impacts associated with operational phase are also discussed in the main ESIA Study.

46. This section only covers the additional impacts to be generated from the extension work. There is a school at the south end but outside of the proposed land port area and adjacent to the existing highway. Land port traffic will be moved to the west side of the school avoiding the existing highway. So, port traffic will not interfere with the existing highway traffic in front of the school. There will not be any impact due to the port traffic on the school. Moreover, a permanent boundary wall will be constructed between the school and the land port activity area. A buffer zone with a close tree plantation area will be developed between the school boundary wall and the land port activity area.

## 5.1 Environmental Impacts during Construction Phase

### **Sitting of Additional Construction Camp**

47. Prior to the commencement of the work, the contractor will construct the labor shed (preferably male shed-15ft x 30ft and female shed 12ft x 15ft with standard living arrangement) at the designated place proposed by BLPA and Supervision Consultant (SC). The contractor is also responsible for providing other relevant facilities at the labor shed such as water supply, sanitation (separate toilet for male and female), waste disposal facility by providing bins, electricity, mosquito net, cooking arrangement, separate place for prayer etc.

48. Construction camps also include other facilities such as workshops, equipment washing yards, borrow pits, quarries, crushing plants, batching plants, construction material storage areas, haul routes and disposal sites for construction waste will be finally decided by BLPA in consultation with CSC and Contractor. The construction process will take more than a year, with the result that the camps will take on a semi-permanent appearance. The people and the changes they bring can have significant impacts on the local communities and social structures.

49. Unhygienic conditions at the labor shed and generation of sewage and solid waste at the labor shed may cause degradation of the surrounding environment. Substantial numbers of workers will inhabit the area in temporary camps loading local infrastructure and causing ambient social influence. Hence, in addition to the environmental impact, social issues such as abuse of the female workers by male workers, gender-based violence including eve teasing, sexual harassment, possible crime, drug addiction, political conflicts etc. may happen at the labor shed, if proper measures are not taken.

### **Tree cutting and clearing of vegetation**

50. Site clearing will require cutting of 1296 trees of different varieties and sizes, clearing of the vegetation, bushes, shrubs, herbs etc. The trees to be cut have proportionate economic, eco-functional and aesthetic significance. Therefore, removal of the trees and clearing of the vegetation, bushes, shrubs, herbs will cause ecological loss to the environment.

### **Transportation, handling and storage and pollution from the additional construction materials:**

51. Transportation, handling, and storage risks associated to the occupational health and safety. Improper stockpiles of the construction materials also may degrade the surrounding environment. On the other hand, dumping of the construction spoils, including accidental leakage of the oil, grease, and fuel in equipment yards is a significant hazard. These substances can be washed-out by the storm water and can be discharged into the surface water of Feni River. Even the people engaged in the construction activities and local communities might endanger the physical and human habitats of the area.



### **Visual Amenity**

52. Construction activities that are likely to create a visual intrusion and a disruption to aesthetics/landscape/topography include: materials lay down, excavation, backfilling, and spoil may affect the aesthetic view. Clearing vegetation will cause an appearance change of the landscape.

53. There is a primary school nearby to the proposed area for extension. During the construction work, a specific boundary and a buffer zone will be created between the work area and the school to minimize and avoid any undue impacts on the school, especially during school hours. The project traffic movement also be controlled by the flagman to avoid any traffic induced impacts especially on the children.

## **5.2 Social Impacts during Construction Phase**

### **Impacts due to Labour Influx from additional workforce**

54. **Impacts:** Conflicts may occur between local workers who may feel that they have received unfair wages. During construction phase, external workers from outside the project area will be deployed. Then conflict may also occur between local workers and external workers because of any changes to local traditions if external workers cannot understand and cannot cope with the local customs. Increased interface between migrants and locals sometimes creates community conflicts.

### **Community Health Impacts from Migrant Workers from additional workforce**

55. **Impacts:** As the project worker and staffs will live in the temporary construction camp and surrounding area in a rental basis, the following health risk may arise due to the migrant worker:

- Spread of communicable especially sexually transmitted diseases;
- Poor health infrastructure in the project area may worsen the spread of any disease; and
- Lack of hygiene and adequate sanitation facilities would create health ailments related to food poisoning or diseases like malaria, viral fever, and gastroenteritis within the community.

### **Gender Based Violence and Impact on Women Group from Migrant Workers from additional workforce:**

56. The presence of a large workforce at site during construction may induce eve teasing, sexual harassment (SH), sexual exploitation and abuse (SEA). In fact, many migrated people who will stay at the labor shed for a longtime outside from the family may cause possible gender-based violence (GBV). Due to increased gender-based violence in Bangladesh, this issue should be carefully handled at project site.

57. The estimated workforce and labor influx is lower than the original project. Hence, BLPA can easily monitor the issue. The current project GRM includes GBV issue. It is also noted that knowledge and awareness on GBV issue is increased due to the current project. GBV risk of the extension work can be rated as moderate and GBV, SEA/SH risk of the extension work is lower than the main project. At the initial stage of the project Safeguard Team (E&S) Cell was formed. They started work closely in the field, as well as (E&S) Cell built up their capacity and ready to implement their experience to the next period of project implementation. The existing SEA/SH Risk Mitigation and Response Action Plan of the BRCP-1, the Project is adequate to response to GBV, SES/SH issue. There is no additional measure required and the project SEA/SH Risk Mitigation and Response Action Plan will be part of the bidding document.

### **Impacts on Indigenous People due to proposed extension work:**

58. Of the affected households, 26 are tribal. These tribal people have been living in the area for generations and have their customary rights on land. However, the land entitlement process motivated many of them to formalize their land in the state's land office. However, local headman is still the local custodian of land, through whom or upon his endorsement land in this area is registered in the local land office. Thus, all people regardless tribal or Bengali settlers must follow

this process of endorsement. Thus, in the process of land transfer, land buyers need to get clearance from the local headman, and the land would be registered subject to the clearance of headman. Since this endorsement process takes a longer time, people transfer land by means of local stamp paper called “haat dolil”. This dolil is considered as a legal document for further land transfer.

59. Free prior informed consultation (FPIC) has been performed following the guideline of OP 4.10 for FPIC with the tribal populations in the project area including tribal PAPs. The local tribal headman is actively participated in the FPIC discussion and shared experience and impacts of the previous land acquisition for the original project. Apart from the land acquisition and resettlement impacts, there are some other social risks associated with the tribal people due to the extension work that needs to be addressed and clearly handled by the project proponent. Following OP/BP 4.10 Indigenous People, the project has already prepared an Indigenous People Plan (IPP) for the extension work of Ramgarh Land Port that will be followed.

### **Impact on Children’s right:**

60. Due to COVID-19 pandemic, the number of people goes under poverty line is more than the recent past in Bangladesh. This situation gets worsening due to the high price of the food products and inflation of the other products. Hence, to overcome the situation parents who go under poverty line can engage their children in the construction activities. Due to the relatively low wage of the child labour, the contractor can exploit them. This issue should be carefully handled at the project site during the construction period.

61. The minimum age for most child labour employment is 14 for light work and the minimum age for normal or heavy work is 18. The construction workforce is easily available in Bangladesh and does not seek for child labour. Hence, contractor can avoid the engagement of child labour force. In case of any child labour engagement to be required considering the financial crisis of the respective family, the contractor provide them light work like curing work, assistant to masonry etc. With this assumption, the child labour is less than 1% of the total workforce.

### **Land Acquisition and Resettlement Impacts**

62. **Impacts:** This project requires land acquisition. Land acquisition always causes removal of structures, resettlement of affected people, removal of vegetation, relocation of utilities and inconvenience to the local people. The resettlement is anticipated to cause mainly three types of social impacts such as psychological stress, split of communities, and loss of livelihoods or business opportunities. The proposed 10.14 acres land acquisition includes 52 homesteads, and 5 business structures will be affected. In addition, 49,575 sq. ft. structures will be affected. Besides, a total of 1296 trees of different varieties and sizes will be cut down. Removal of the structures will cause disturbances to the people temporarily.

## **5.3 Impacts during operation phase**

### **Landscape and Tree Plantation**

63. After completion of the construction work, new trees will have to be planted to compensate for the cut down trees which will provide a positive impact on the natural environment. Inappropriate selection of tree species and plantation location may not ensure the inherent objective of the tree plantation plan. Moreover, lack of proper care (e.g. watering, securing with fence) by the respective authority will also hinder the process of proper growth of the planted trees. Proper landscaping also needs to be ensured at vacant places in the port. By proper tree plantation, it needs to be ensured green belt development and a buffer zone between the port and homestead area.

64. Aesthetic view and beauty play an important role. After construction, green belt development through plantation will improve the aesthetics view of the project area.

### **Fire Hazard Associated with Coexistence of Chemical Storage Risk**

65. Land Ports are subject to numerous fire safety risks, from the continued use of onsite vehicles to the storage of flammable materials. Hence, fire hazard associated with coexistence of chemical storage risk during operational period and needs effective measures to mitigate and minimize the risk and ensure a safe site for staff, workers, and visitors. BLPA needs to put in place solutions for safe and secure storage of all hazardous material at Ramgarh land port.

### **5.4 Climate Change Issue**

66. The climate change impacts are described for the following two aspects:

- Likely changes in the climatic conditions with respect to temperature, flash flooding, landslides, and drainage aspects; and
- Greenhouse gas emission.

#### **Climate Change Impact on Flash Flood and Landslides**

67. There is no recordable incident of flood event in the study area. However, there is always chance of flash flood due to heavy rainfall for longer period and increase of water level at the upstream of River Feni but duration of water level in and around the project area is for short time only as the topography of the land around the project area are sloppy. Due to heavy rainfall for a longer period in passed period, there is no record of landslides is recorded as well in the study area.

#### **Climate Change Impact on Drainage**

68. Due to climate change the intensity and duration of the rainfall may dramatically increase as a result there will be some impact on the internal drainage system. An adequate drainage system will be designed in the project area and will be mitigated as well. As the surrounding area is well sloped, excess surface run-off due to the heavy rain will be managed accordingly.

#### **Greenhouse Gas (GHG)**

69. The GHG emission is anticipated more due to larger movement of heavy vehicles like trucks, lorries, trailers which are known for poor maintenance and thus inefficient fuel burning. Over 94% of the fuel used for the transport vehicles is petroleum based, which includes primarily gasoline and diesel. The majority of greenhouse gas emissions are carbon dioxide (CO<sub>2</sub>) emissions resulting from the combustion of petroleum-based products, like gasoline and diesel fuel, in internal combustion engines. Relatively small amounts of methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) are emitted during fuel combustion of the transport vehicles. In addition, hydrofluorocarbon (HFC) emissions also occur from the transportation vehicles. These emissions result from the use of mobile air conditioners and refrigerated transport.

## 6 STAKEHOLDER CONSULTATION AND DISCLOSURE

### 6.1 Approach, Methodology and Tools Used for Consultation

70. A systematic stepwise approach undertaken for consultation and information disclosure involved the following key processes:

- Communicate with the key stakeholders for conducting consultation meeting;
- Undertaking field consultations, interviews and formal and informal meeting with the respective stakeholders;
- Listing of the participants attended in the consultation meeting;
- Assessing the influence and impact of the project on these stakeholder groups;
- Understanding the baseline conditions of the project area;
- Assessing the responses and attitudes of the people to the Project impacts and planned mitigation measures;
- Summarizing key findings and observations from the consultations.

71. A separate consultation i.e. free prior informed consultation (FPIC) with the project affected people was also conducted intending to discuss the land acquisition issue, their views toward the project, resettlement/relocation option, etc. All PAPs attended the consultation meeting and discussed their previous experience on the land acquisition for the same project and expressed their expectation. As consultation a group discussion consisting of affected people by the proposed land acquisition and a few previously affected people was carried out. The consultation process follows the guideline of OP 4.10 for free, prior and informed consultation. The meeting was pre-arranged: meeting venue, date and time was set before the consultation held. The study team visited the affected site and invited them to the meeting. In the meeting, the team showed the proposed layout and the land acquisition area and discussed a couple issues following the standard procedure of consultation. Thus, a meeting was conducted on June 15, 2023, at 11:00.

72. In fact, multiple tools and methods have been used during the consultation meetings. These include the key informant interviews and walk through interview (5 interviews were conducted); FGDs with various occupational/interest groups (3 FGDs were conducted with 22 participants); stakeholder consultation meetings, issue specific consultation meetings, walk-through informal group consultation. The use of a wide range of methods helped to fully involve all types of stakeholders and engage them in meaningful consultations. In total, there are 75 people were consulted among them male 65 and 10 female participants.

The consultation activities are shown in the following photographs.







**Photograph 2:** Some Photographs of the FGDs, KIIs and Consultation Meeting

## 6.2 Summary and Findings of the Consultation

73. The project affected people discussed some issues on the proposed project activities including land acquisition and stated their previous experience on land acquisition for the same project. The key discussed points are discussed in the following:

- Local people support the project and no visible conflict between the local people regarding land acquisition;
- Compensation money significantly will improve socio-economic condition of land the owners;
- Work opportunity for the local people as much as possible;
- Engagement of vulnerable local people for the construction and operation work;
- Provision of traffic control and other road safety issues in all phases of the project;
- Occupational and public health & safety consideration in all phases of the project;
- Project implementation with minimum adverse impacts on the environment and local people;

- It will generate more employment and socio-economic improvement at the project area;
- All participants expressed positive attitude toward the project as they received compensation properly from the previous land acquisition;
- The compensation should be based on the market price so that people can purchase land in a good place and build their homesteads;
- Participants urged immediate opening of the land port, as they are waiting for a longer period of time;
- Participants who were affected by the previous land acquisition showed their happiness on the project, as they received compensation properly and timely without any hassle;
- Participants wanted to be resettled by themselves with the same neighbors in the same neighborhood.

74. It is noted that ESIA for the extension work will be disclosed in the project website and as well WB website after approval. In addition to the English language, an executive summary of the approved EISA will be prepared in Bangla and will be disclosed in the project website and project construction office at Ramgarh land Port. Existing people including indigenous people can read and speak Bangla.

## **7 GRIEVANCE REDRESS MECHANISM**

75. BLPA has already established a local level grievance redress committee (GRC) for Ramgarh Land Port to receive and resolve any complaints related to land acquisition and other issues. The contact information is already provided at the project area and details of the project GRM is given in the main ESIA. The scope of work of the committee and process of receiving the complaint with remedial procedure is already defined. There are six members of the committee who is responsible to receive complaints and resolve all issues including GBV, SEA/SH related grievances. This committee also will be responsible for receive complaints and resolve for the proposed land acquisition and associated development works.

## **8 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN**

### **8.1 Inclusion of ESMP in the Contract Documents**

76. ESMP with estimated cost is an integral part of EPC contract/ bidding documents as mandatory contractual obligations. Contractual payment is linked to satisfactory compliance to implementation of the ESMP provisions. The provision should also be made in the contract documents for penalties for non-compliance by the contractor. The contractor must be made accountable to implement the plans and mitigation measures which pertain to them through contract documents and/or other agreements of the obligations and importance of the environmental and social components of the project.

## 8.2 Environmental and Social Mitigation Plan

77. The activity wise anticipated environmental and social impacts and corresponding mitigation measures in different phases of the project have been outlined in Table 13.

**Table 13: Environmental and Social Mitigation Plan**

Activity / Issues /Parameters	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
<b>Pre-Construction Phase &amp; Construction Phase</b>			
Climate Change	<ul style="list-style-type: none"> <li>● Climate change induced impacts (e.g. flooding, internal drainage congestion); and</li> <li>● GHG due to burning fossil fuel for vehicle and equipment operation.</li> </ul>	<ul style="list-style-type: none"> <li>● Consider climate change study output for the design of drainage system;</li> <li>● Effective management of project vehicle and equipment;</li> <li>● Planting of new trees can help militate against climate change by removing CO<sub>2</sub> from the atmosphere.</li> </ul>	Construction Supervision Consultant (CSC) Supervision by BLPA
Land Acquisition	<ul style="list-style-type: none"> <li>● Land acquisition will cause removal of structures, resettlement of affected people, removal of vegetation, relocation of utilities and inconvenience to the local people.</li> </ul>	<ul style="list-style-type: none"> <li>● Acquire minimal area of land that meets the requirement of Port;</li> <li>● Allocation of proper compensation according to Resettlement Plan (RP);</li> <li>● Landowners will have to be informed prior to land requisition and land requisition has to be done making written agreement between the two parties.</li> </ul>	DC/UNO/GRC  Supervision by BLPA/CSC
Removal of Structures	<ul style="list-style-type: none"> <li>● The project will require removal of the structures due to land acquisition. Removal of these structures will cause disturbances to the people;</li> <li>● Potential health and safety risk and accidents due to removing of tin shed, semi-pucca, pucca structures and utilities (electrical connection).</li> </ul>	<ul style="list-style-type: none"> <li>● PAPs must be informed through a notice in time as though they can get enough time to make a plan for relocation/shifting;</li> <li>● PAPs will have to be properly compensated and relocated as per the RAP before commencing removal of infrastructure;</li> <li>● Electric power and all services should be shut off within the structure before demolition work to be started;</li> <li>● Site should be fenced and screened to protect site from strong winds and to contain dust;</li> <li>● Ensure use of the personal protective equipment where applicable;</li> <li>● Ensure careful operation of the machineries and equipment;</li> <li>● Demolition work should be started from roof and then side brick wall, fencing;</li> <li>● Demolition work should avoid at schooling time and at nighttime and should follow normal working hour;</li> <li>● The demolition works shall be taken not any nuisance by the way of noise, dust and vibration to the surrounding environment;</li> <li>● Cover the exposed loose waste with much fabric.</li> <li>● Debris created after demolition may be used at the bottom of the filling area.</li> </ul>	DC/UNO/GRC  Supervision by BLPA/CSC
Relocation of Utilities	<ul style="list-style-type: none"> <li>● Relocation of utilities like electricity line &amp; meter, solar panel, water supply system will temporarily</li> </ul>	<ul style="list-style-type: none"> <li>● Prior consultation with the authorities of utilities is essential regarding relocating the utilities;</li> <li>● Written approval must be obtained for relocation; and</li> </ul>	Contractor/Respective authority of utility Supervision by

Activity / Issues /Parameters	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
	cause inconvenience to the users.	<ul style="list-style-type: none"> <li>● Safety must be ensured while relocating the utilities.</li> </ul>	BLPA/CSC
Tree Cutting and Clearing of Vegetation	<ul style="list-style-type: none"> <li>● Permanent loss of trees;</li> <li>● Loss of habitat.</li> </ul>	<ul style="list-style-type: none"> <li>● The loss caused due to felling of 1296 trees because of the project activities will be compensated by planting 2852 new trees and green belt development (e.g. minimum two tree seedlings to be planted for each tree felled after completion of the construction activities of the project and considering additional 10% for any loss). To compensate the felled down trees and to enhance the ecological condition-preferably local species of fruits, flowers, medicinal and ornamental Trees are-Mango, Jackfruit, Jam, Kathbadam, Tetul, Palm Tree, Neem, Amloki, Horitoki, Bohera, Sonalu, Jarul, Polash, Krisnachura, Bokul, Kadam, Shimul, Mahogany, Satim, Koroi. BLPA with the assistance from Forest Department will finalize the species of trees to be planted at 3 m spacing at suitable places within the port area.</li> <li>● In addition, some of the trees will be kept as they are with protection at the base, some of the small size trees will be replanted according to the masterplan.</li> <li>● Details of tree plantation plan have been given during prior to the tree plantation work.</li> </ul>	Contractor/MoEF  Supervision by BLPA/CSC
Sitting of additional Construction Camps- Construction and operation of labor shed (Workforce and labor shed management)	<ul style="list-style-type: none"> <li>● Sitting of construction camp may cause-physical and visual impact on the area;</li> <li>● Construction process will take more than 1 year, with the result that the camps will take on a semi-permanent appearance.</li> <li>● Most important aspects are pollution risk of soil and surface water due to sanitation of the labor camps and wastes from the camps.</li> </ul>	<ul style="list-style-type: none"> <li>● Construction and operation of workers' accommodation and labor camp should follow IFC/EBRD Guidance Note on Workers' Accommodation;</li> <li>● The construction camps should be located within the project boundary;</li> <li>● The crushing plants, asphalt hot mix and batching plants also should be located within the project boundary;</li> <li>● The living accommodation and ancillary facilities for labor shall be erected and maintained to standards and scales;</li> <li>● The camps must be located such that the drainage from and through the camps will not endanger to any surface water body;</li> <li>● The contractor will ensure no labor room should be overcrowded;</li> <li>● The labor shed should have adequate ventilation facilities and standard living condition;</li> <li>● Construction of sanitary latrine considering 10 persons for one toilet at the labor shed and separate toilet for male and female;</li> <li>● The contractor will ensure safe drinking water supply facilities;</li> <li>● A toilet room must be located within 50 meters of the door of each sleeping room. No toilet may be closer than 20 meters to any sleeping room, dining area or kitchen;</li> <li>● The contractor will provide temporary surface drainage facilities at the labor camp;</li> <li>● There shall be adequate supply of water in the latrines and urinals;</li> <li>● Solid waste and sewage shall be managed according to the national regulations. As a rule, solid waste must be disposed of at the nearest sanitary landfill or site</li> </ul>	Contractor  Supervision by BLPA/CSC



Activity / Issues /Parameters	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
		having and complying with the necessary permits. The solid waste should not be burned. The contractor will provide separate waste bins for organic and inorganic wastes at the labor shed; <ul style="list-style-type: none"> <li>● The workforce should comply with requirements of Government of Bangladesh Labor law of 2006 and all applicable laws and standards on worker's Health and Safety.</li> </ul>	
Transportation, handling and storage and pollution from the additional construction materials	<ul style="list-style-type: none"> <li>● Construction materials transportation, handling and storage risks associated to the occupational health and safety;</li> <li>● Improper stockpiles of construction materials also may degrade the surrounding environment;</li> <li>● Dumping of construction spoils, including accidental leakage of oil, grease, and fuel in equipment yards is a significant hazard. These substances can be washed-out by the storm water and can be discharged into the surface water.</li> </ul>	<ul style="list-style-type: none"> <li>● Safe transport, storage, and disposal of the construction materials, and the equipment have to be carried out in order to avoid the accidental spillage and loss and to minimize any health risk;</li> <li>● Fuels, lubricants, and other hazardous materials should store over raised platforms and not directly on the ground;</li> <li>● Raised platform (brick soling with neat cement finishing) shall be constructed prior to start working;</li> <li>● Leakage of fuel and lubricants from equipment need to be collected by separate container for reuse or safe disposal and to minimize spreading and pollute adjacent areas;</li> <li>● Maintain adequate moisture content of sand during transportation and handling;</li> <li>● Carry the materials especially loose soil and sand with adequate cover;</li> <li>● Avoid headloads for carrying soil, construction materials and construction equipment.</li> </ul>	Contractor  Supervision by BLPA/CSC
Pollution from Waste and Waste management	<ul style="list-style-type: none"> <li>● Dismantling of structures will generate solid waste;</li> <li>● Kitchen and sewage wastes from labor camp will cause growth of flies and water born germs;</li> <li>● Spreading of disease due to contamination of environment.</li> </ul>	<ul style="list-style-type: none"> <li>● Waste will be segregated for recycling and composting;</li> <li>● Segregate storage for different types of wastes, such as hazardous, non-hazardous recyclable construction material, plastic, paper, etc. to facilitate proper disposal;</li> <li>● Ensure re-use of the materials (use tin for fencing the construction site and demolished bricks could be used as brick chips after removing the mortar on the brick surface) and disposal of the waste materials at the designated location;</li> <li>● Wooden and metal window &amp; door and other furniture should be relocated for re-use;</li> <li>● Scrap metal waste generated from construction activities will be collected and stored separately in a stack yard and sold to local recyclers;</li> <li>● Food waste and recyclables viz. paper, plastic, glass etc. will be stored in designated waste bins/containers and sold to local recyclers while food waste will be disposed through waste handling agency;</li> <li>● Construction waste will be used as backfill in the bottom of the backfilling area;</li> <li>● Hazardous waste viz. waste oil etc. will be collected and stored in paved and bounded area and subsequently sold to authorized recyclers;</li> <li>● Garbage and debris will be reused for site filling and leveling operation to the maximum extent possible;</li> </ul>	Contractor  Supervision by BLPA/CSC

Activity / Issues /Parameters	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
		<ul style="list-style-type: none"> <li>● Ensure optimal re-use of the materials and disposal of the waste materials at the designated location/ dumping site;</li> <li>● No wastes materials and debris shall be burned on the site;</li> <li>● No encroachment of demolition wastes on adjacent roadside area and any private property;</li> <li>● Cover the exposed loose wastes with much fabric;</li> <li>● A log of the disposal of toxic and other waste materials is to be kept by the Contractors;</li> <li>● Toxic wastes will be transported by a licensed carrier for recycling;</li> <li>● Wastes will be disposed to separate space with consultation and contract with Pourashava;</li> <li>● Local landfill/dumping site need to develop for proper dumping of the increased waste from construction work of land port.</li> </ul>	
Visual Amenity	<ul style="list-style-type: none"> <li>● Construction activities that are likely to create a visual intrusion and a disruption to aesthetics/landscape/topography include: materials lay down, excavation, backfilling, and spoil may affect the aesthetic view.</li> <li>● Clearing vegetation will cause appearance change of the landscape.</li> </ul>	<ul style="list-style-type: none"> <li>● Contractor must be careful while doing construction works so that the activities do not hamper adjacent community;</li> <li>● Fill material is collected only from the approved sources and not from any illegal dredging site and agricultural land.</li> </ul>	<p style="text-align: center;">Contractor</p> <p style="text-align: center;">Supervision by BLPA/CSC</p>
Labor Influx and Anticipated Impacts	<ul style="list-style-type: none"> <li>● Criminal activity and alcohol and drug abuse, domestic violence, political attachment &amp; violence, smuggling and robbery etc;</li> <li>● Gender-based violence- eve teasing, sexual exploitation, harassment and abuse (GBV/SEA);</li> <li>● Communicable diseases, including respiratory problems, diarrheal diseases, vector-borne diseases and sexually transmitted diseases;</li> <li>● Conflicts arising from increased demand on existing infrastructure, services, and utilities;</li> <li>● Pressure on the natural resources-</li> </ul>	<ul style="list-style-type: none"> <li>● Equal facilities such as payment, medical facilities, transportation, accommodation, sanitation etc., should be provided for both local and outsider workers.</li> <li>● Inform local people about the project activities.</li> <li>● Liaison with the local public leaders and local administrators in order to get community support;</li> <li>● Engage local people as much as possible to minimize workers from outsiders;</li> <li>● Monitor workers' attitude and behavioral matter;</li> <li>● Monitor the workers' movement for avoiding any unexpected social activities (robbery, crime, political attachment and conflicts, drugs abuse);</li> <li>● Inform local utilities service providers;</li> <li>● Ensure effective use of natural resources such as water, electricity, fuel, wood etc;</li> <li>● Minimization of gender-based prejudice and discrimination from the working place by continuous monitoring;</li> <li>● Awareness raising program should be conducted to minimize sexually</li> </ul>	<p style="text-align: center;">Contractor</p> <p style="text-align: center;">Supervision by BLPA/CSC</p>

Activity / Issues /Parameters	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
	<p>water, electricity, other fuel for cooking, depletion of the water supply, sewage and wastewater generation, degradation of the air quality, waste generation.</p>	<p>transmitted diseases (STDs) and gender-based violence and sexual exploitation and abuse (GVB/SEA);</p> <ul style="list-style-type: none"> <li>● Confidential record and solution of the gender-based violence and sexual exploitation and abuse (GVB/SEA).</li> </ul>	
<p>Community Health and Safety Measures and Community Health Impacts from Migrant Workers</p>	<ul style="list-style-type: none"> <li>● Possible accidents of the adjacent primary school going kids;</li> <li>● Possible noise nuisance;</li> <li>● Spread of communicable especially sexually transmitted diseases;</li> <li>● Poor health infrastructure in the project area may worsen the spread of any disease; and</li> <li>● Lack of hygiene and adequate sanitation facilities would create health ailments related to food poisoning or diseases like malaria, viral fever, and gastroenteritis within the community.</li> </ul>	<ul style="list-style-type: none"> <li>● Traffic will be controlled by the traffic control officer, installation of the safety signage and speed breakers, road safety awareness campaign for the primary school going kids, provide signal man/Ansar during starting and closing time of the school during construction and operation period of land port;</li> <li>● Construction of permanent boundary wall, diversion of traffic, if possible, tree buffer zone etc.;</li> <li>● Engage maximum local manpower to avoid large scale migration of labour;</li> <li>● Provision of infrastructure and amenities for migrants to avoid dependency on local resources;</li> <li>● Adequate sanitation facility at labour camps to maintain hygiene and minimize spread of diseases;</li> <li>● Creating awareness about local tradition and culture among the migrant and encouraging respect for same;</li> <li>● Providing awareness training regarding sexually transmitted diseases among the migrant population;</li> <li>● Proper waste disposal from the camp and construction activity to maintain general hygiene in the area;</li> <li>● Avoid unnecessary movement of vehicles through settlement areas to avoid traffic safety related issues.</li> </ul>	<p>Contractor</p> <p>Supervision by BLPA/CSC</p>
<p>Gender Based Violence and Impact on Women Group and Gender Issue</p>	<ul style="list-style-type: none"> <li>● Presence of a large workforce at site during construction may induce eve teasing, sexual harassment (SH), sexual exploitation and abuse (SEA) and may cause possible gender-based violence (GBV).</li> </ul>	<ul style="list-style-type: none"> <li>● Training will be provided to the contractors, supervisors and workers;</li> <li>● Workshops with the surrounding community people, leaders will be arranged;</li> <li>● Periodical leave provision for the migrated workers should be ensured so that they can meet their family regularly;</li> <li>● Grievance redress mechanism has been established at Silo site.</li> </ul>	<p>Contractor</p> <p>Supervision by BLPA/CSC</p>
<p>Children's right</p>	<ul style="list-style-type: none"> <li>● Child labor may be engaged during construction and the contractor can exploit them.</li> </ul>	<ul style="list-style-type: none"> <li>● Contractor shall avoid the engagement of child labor force;</li> <li>● Patrolling periodically to check for any child labor;</li> <li>● Contractor shall provide ID to the workers and maintain on-site labor log.</li> <li>● <b>During employment of Labor NID will be checked for verification of age.</b></li> </ul>	<p>Contractor</p> <p>Supervision by BLPA/CSC</p>
<p><b>Operation Phase</b></p>			
<p>Landscape and Tree Plantation</p>	<ul style="list-style-type: none"> <li>● After completion of the construction work, trees will have to be planted which will provide</li> </ul>	<ul style="list-style-type: none"> <li>● Prior to the tree plantation, with the assistance from the SC and contractor, BLPA will finalize the tree plantation plan;</li> <li>● Different species as per the tree plantation plan will be planted at the designated</li> </ul>	<p>Operator/ BLPA</p>

Activity / Issues /Parameters	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
	<p>positive impact on the natural environment;</p> <ul style="list-style-type: none"> <li>● Inappropriate selection of tree species and plantation location may not ensure the inherent objective of the tree plantation plan;</li> <li>● Lack of proper care (e.g. watering, securing with fence) by the respective authority will also hinder the process of proper growth of the planted trees.</li> </ul>	<p>places;</p> <ul style="list-style-type: none"> <li>● BLPA and contractor (up to defect liability period) will be responsible to take measures of protecting the planted seedlings until the seedlings grow enough to survive independently;</li> <li>● The scope of natural rehabilitation of the local wildlife to the habitat will be created in result of the tree plantation and growth of the vegetation.</li> <li>● The temporarily modified land use pattern, such as construction of temporary labor shed, accommodation for construction personnel will be totally removed during the operation stage;</li> <li>● A proper Maintenance and Operation (O&amp;M) Plan should be prepared and act accordingly during operation stage.</li> </ul>	
Sewage, Water pollution and pollution from waste and Waste management	<ul style="list-style-type: none"> <li>● Causes water borne diseases;</li> <li>● Improper management of solid wastes may lead to degradation of aesthetic view and quality of soil &amp; water quality;</li> <li>● Bad odor due to non-removal of waste regularly will also cause unhealthy conditions including attracting nuisance animals such as flies and mosquitoes;</li> <li>● Wastes will also cause human health diseases;</li> <li>● Like water, air and land pollution solid waste may cause diseases to man and other lives;</li> <li>● Disease vector proliferation, sanitary problems.</li> </ul>	<ul style="list-style-type: none"> <li>● Maintenance of septic tanks, soak wells, pipes, etc. as and when required;</li> <li>● In request of the Port Authority concern section of Pourashava/DPHE will collect liquid waste from septic tank and soak well and finally dispose to their selected place for treatment; and</li> <li>● Regular monitoring of water quality if possible;</li> <li>● Setting up of separate covered system waste collectors (one for organic and other for inorganic wastes);</li> <li>● The inorganic wastes (re-usable) should be sold;</li> <li>● The organic wastes should be disposed in the covered drums placed at designated area and those waste will be collected for final disposal;</li> <li>● These collectors should be emptied, cleaned and replaced by the designated persons regularly;</li> <li>● Provision for incinerator for plastic waste.</li> <li>● Setting up of separate waste collectors at different points;</li> <li>● Regular cleaning and replacing of waste collectors;</li> <li>● Waste disposal at a safe place;</li> <li>● Pourashava should collect solid waste every day and disposed to the landfill site;</li> <li>● Capacity of local landfill/dumping site need to increase for dumping of the extra waste generated from regular activities of land port;</li> <li>● Encourage waste sorting by the facility users.</li> </ul>	Operator/ BLPA
Risk from Chemical Storage	<p>Fire safety risks from the continued use of onsite vehicles to the storage of flammable materials.</p>	<ul style="list-style-type: none"> <li>● BLPA needs to put in place solutions for safe and secure storage of all hazardous material at Sheola land port;</li> <li>● The Fuel and Hazardous Substances Management Plan needs to be prepared by BLPA in accordance with the standard operating procedures, relevant guidelines, and where applicable, material safety data sheets (MSDS). The Plan will include the procedures for handling the chemical storage like ethanol and methanol;</li> </ul>	Operator/ BLPA

Activity / Issues /Parameters	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
		<ul style="list-style-type: none"> <li>● All chemicals must be stored in a safe, secure location;</li> <li>● Shelves should be level, stable, and secured to the wall or another stable;</li> <li>● Store chemicals away from direct sunlight, sources of heat, and egress pathways;</li> <li>● Hazardous chemicals must be stored below eye level;</li> <li>● Do not store chemicals on the floor, window ledges, or balconies;</li> <li>● Keep containers closed unless you are dispensing a chemical or adding to the container;</li> <li>● Provide secondary containment for liquids whenever possible. Dishpans or polyethylene trays work;</li> <li>● Don't store chemicals in a sink or fume hood;</li> <li>● Label containers, and be sure container is compatible with the chemical;</li> <li>● Use rated storage cabinets or safety cans whenever possible required for &gt;10 gal. of flammables;</li> </ul> <p>Cold rooms, refrigerators, and freezers have additional requirements, particularly for flammables.</p>	

78. In the main ESIA Study, mitigation measures for other important environmental parameters like- air quality, noise, waste generation, water quality, occupational & community health and safety, traffic congestion and other socio-economic impacts are discussed. Mitigation plan for environmental and social parameters are also discussed in the main ESIA Study. In addition to mitigation plan, a monitoring plan is also included in the main ESIA covering all possible environmental and social parameters.

### 8.3 Environmental Management Budget

79. The extension works to be executed by engaging new contractor and separate work package. Hence, budgetary provision is required for the environmental management. However, budgeting for environmental management for the extension work is being followed the similar pattern of the main ESIA study (below table).

**Table 14:** Environmental Mitigation Costs during Construction of extension work of Ramgarh Land Port

Sl. No.	Description of Item	Unit	Quantity	Unite Rate (BDT)	Item Total (BDT)
01	During soil carrying for land filling and during construction period dust management by water sprayer	LS	-	-	300,000
02	Maintenance and protection of traffic including construction of diversion road, warning signs, posting of signboard detaining project activities	LS	-	-	150,000
03	Campsite waste disposal facilities	Nos.	2	50,000	100,000
04	First aid box for treatment of injuries on emergency situations	Nos.	2	50,000	100,000
05	Water supply Tube wells	Nos.	2	50,000	100,000
06	Sanitary Facilities	Nos.	12	25,000	300,000
07	Tree plantation and green area development plan	Nos.	2850	1000	2,850,000
08	Water quality protection measures: soil erosion and sedimentation control at the construction site, and prevention of spillages, leakages of polluting materials, etc. to be satisfaction of the engineer.	LS	-	-	200,000
09	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	-	-	300,000
10	Rehabilitation of ancillary sites including stockpile sites, brick crushing sites, borrow areas, work force camps/ site office, etc. and turfing to the entire satisfaction of	Sq. m	2000	20	400,000
11	Orientation to the technical personnel/ construction worker associated with the port about the key issues of ESMP & Environmental Monitoring	LS	-	-	200,000
12	Capacity building of BLPA staff for general and cumulative impact mitigation	LS	-	-	200,000
<b>Total in Tk. Fifty-Two Lacs only</b>					<b>5,200,000</b>

**Table 15:** Environmental Monitoring Costs during Construction of extension work of Ramgarh Land Port

Component	Stage	Item	Unit Cost (BDT)	Quantity (Yearly)	Total Costs (BDT)
Awareness, Warning signs, labels and signals Accident	During Construction	Ensuring that ESMP works right on the track	--	--	100,000
Campsite waste disposal facilities	During Construction	Avoid disease	LS	-	100,000
Air Pollution	During Construction	Measurement of SPM, PM <sub>10</sub> , PM <sub>2.5</sub> , NO <sub>x</sub> , SO <sub>2</sub> , CO. (2 locations)	30,000	4	120,000
Water Pollution	During Construction	Measurement of pH, EC, Turbidity, DO, Coli form, BOD, NH <sub>4</sub> N Oil and Grease	30,000	4	120,000
Waste	During Construction	Collection, transportation and dumping of waste at authorized dumping sites. Minimization of volume and recycling.	LS	--	50,000
Noise	During Construction	Periodical maintenance of construction vehicles and installation of sound insulation cover	5,000	4	20,000
Drinking Water supply and sanitation	During Construction	Arsenic free water/ Treatment and test cost	30,000	4	120,000
Reporting on Environmental Monitoring	During Construction	Quarterly Monitoring Report	150,000	4	6,00,000
<b>Grand Total</b>	<b>In Word Tk. Eleven Lac Thirty Thousand Only</b>				<b>12,30,000</b>

**Table 16:** Environmental Monitoring Costs during O&M Phase of extension work of Ramgarh Land Port

Component	Stage	Item	Unit Cost (BDT)	Quantity (Yearly)	Total Costs (BDT)
Air Pollution	During operation	Measurement of PM <sub>10</sub> , PM <sub>2.5</sub> , NO <sub>x</sub> , SO <sub>2</sub> , CO.	30,000	4	120,000
Water Pollution	During operation	Measurement of pH, EC, Turbidity, DO, Coli form, BOD, NH <sub>4</sub> N Oil and Grease	30,000	4	120,000
Solid Waste Management	During operation	Collection, transportation and dumping of waste at authorized dumping sites. Minimization of volume and recycling.	LS	-	100,000
Noise	During operation	Securement of buffer zone around 100m as noise decay distance	5000	4	20,000
Drinking Water supply and sanitation	During operation	Water Treatment and test cost	30,000	4	120,000
Reporting on Environmental Monitoring	During Operation	Quarterly Monitoring Report	150,000	4	600,000
<b>Grand Total</b>	<b>In Word Tk. Ten Lac Eighty Thousand Only</b>				<b>1,080,000</b>

Estimated total environmental management budget is 7,510,000 BDT (Seventy-Five Lacs Ten Thousand Taka Only).



## 8.4 Environmental Codes of Practice and Specific Clauses for Bid Documents

80. This section identifies and specifies environmental and social management guidelines and practices to be followed by the contractor (or his appointed sub-contractors) for sustainable management of all environmental and social issues. The Contractor (or his appointed sub-contractors) shall carry out the project related activities as specified in contract agreement. BLPA shall ensure that contractor (or his appointed sub-contractors) take due responsibility to mitigate those negative impacts. Environmental awareness creation, particularly about the direct construction impacts and for the health, pollution and safety issues will be Contractor's (or his appointed sub-contractors) responsibility. Clauses that may be incorporated in the contract documents are:

- **ECOP-1 (Overall Environmental Protection):** The Contractor shall take all steps to protect environment and public nuisances of all types during implementation;
- **ECOP-2 (Ensuring Regularity Requirements):** Contractor shall comply with the existing statutes and regulations concerning the execution of works as per requirements of DoE. Contractor shall be responsible for familiarizing with the legislation relating to environmental protection that is relevant to activities;
- **ECOP-3 (Labor shed Management):** Contractor shall maintain the camp and construction sites in clean and tidy condition and shall ensure standard facilities in the labor shed. The contractor shall be responsible for the provision of adequate sanitary facilities (separate toilet for male and female) for the construction workforce (including those employed under subcontracts) at all construction, office, and camp sites. The contractor shall not knowingly allow discharge of any untreated sanitary waste either to groundwater or surface water and on existing drain. Before mobilization of the construction workforce, the contractor shall provide details of sanitary and drainage arrangements to the Engineer for approval. The detail should include maintenance and operation plan and generally be sufficient to allow the Engineer to assess whether the proposed facilities are adequate;
- **ECOP-4 (Workforce Environment):** Contractor shall engage local people as much as possible where applicable and ensure prohibition of the child labor (less than 18 years) and aged labor (more than 65 years for heavy works). Contractor shall pay to the workers regularly and ensure no discrepancy in the wages between men and women for similar works;
- **ECOP-5 (Waste Management):** Contractor shall be responsible for the safe transportation and disposal of the wastes generated due to the project activities in such a way that no environmental pollution or hazard to health is caused to the workers and local people;
- **ECOP-6 (Workers Health and Safety):** Contractor shall be responsible for providing personal protective equipment (PPEs) and first aid facilities as per requirements;
- **ECOP-7 (Compensation for Accidents):** Contractor shall bear medical treatment costs for any accidents. If any severe accidents such as loss of hands, legs or loss of working ability or any case of death needs compensation- (the amount of the compensation should be fixed considering the type of accidents);
- **ECOP-8 (Implementation of the Mitigation Measures in Daily Activities):** Contractor shall be responsible for the implementation of the mitigation measures mentioned in the EMP and follow the guidelines in the daily activities of the project;
- **ECOP-9 (Spill Prevention, Fuels and Hazardous Substances Management):** Contractor shall take preventive measures for spill prevention and fuels and hazardous substances management. Contractor shall not allow waste oil, lubricant or other petroleum derivatives to be used as dust suppressants and shall take all reasonable precautions to prevent accidental spillage of the petroleum products, contact of such materials with soil or water course through discharge, run-off and seepage;
- **ECOP-10 (Equipment, Machinery and Vehicles to be used):** All equipment, machinery, vehicles, and plant operated by the contractor shall be maintained according to the original manufacturers' specifications and manuals, regarding the control of noise and/or smoke emissions. BLPA shall have the right to ask the contractor to replace or rectify any



equipment, machinery, vehicle, or plant that they think emits excessive noise and/or smoke, within 48 hours of notice in writing.

- **ECoP-11 (Noise Nuisance):** The contractor shall make reasonable effort to reduce noise nuisance caused by construction activities, including location of crusher for making aggregates and ancillary plants and or ready-mix concrete plant in locations where the distance between those plants and residential areas is such that it results in attenuation of noise at existing residential areas.
- **ECoP-12 (Dust Suppression Measures):** The contractor shall take all reasonable measures to minimize dust-blow arising from any sites (work site, labor campsite, material storage yard, brick crushing site etc.) under his control by regular watering of any stockpile, bare soil, haul road, un-surfaced traffic area and any sources of fatigue dust, when conditions require dust suppression. If, in the opinion of the Engineer, the dust suppression measures are ineffective, the contractor shall take further measures to minimize the dust blow nuisance as directed by the Engineer.
- **ECoP-13 (Traffic Disruption):** To avoid any traffic disruption due to transportation of the equipment, machinery, and vehicles; the contractor should perform any transportation activities at night. In case of any traffic disruption is caused by the construction activities, the contractor shall be responsible to provide separate pathway to the full operational use by the vehicles. The facilities in this regard shall be such that either party is not disturbed.
- **ECoP-14 (Road and other structure damage):** In case of any road and structure damage due to the project activities, the contractor shall notify the engineer about it and at his own cost shall repair the road to its original condition.
- **ECoP-15 (Restoration of the Facilities):** The contractor on completion of the contract shall remove the equipment, surplus materials, and rubbish and temporary structures of all types and shall leave sites in clean condition to the satisfaction of BLPA.
- **ECoP-16 (Conducting Analytical Monitoring):** Contractor shall be responsible for conducting monitoring as per EMP and submit the reports to the BLPA.
- **ECoP-17 (Awareness Building Program for ESHS):** Contractor shall be responsible for conducting training program for raising awareness and knowledge on ESHS issues.
- **Policy-18 (Labor Employment, Accommodation and Treatment):** The contractor should actively consider (i) where the workers would live during construction of the building (ii) living conditions of the workers; and (iii) the concomitant social reactions in the adjacent communities due to the presence of non-local people.

## **9 CONCLUSION AND RECOMMENDATION**

81. This study has been done as an addendum of the existing ESIA Study to incorporate the related risks and impacts along mitigation measures due to the proposed extension of the facility and service area by acquiring 10.14 acres of additional land. The report has been prepared complying the regulations of DoE and the World Bank.

82. The environmental impacts during construction phase due to the proposed extension are mainly from sitting of additional construction camps, tree cutting and clearing of vegetation, site preparation including land development, excavation and backfilling to some extents, hauling of earth materials and wastes, transportation, handling and storage and pollution from the additional construction materials, construction of sub-structure and super-structure works and associated impacts on degradation of air, noise & water quality and waste generation and induced impact. Social impacts during construction phase are labour influx from additional workforce, community health impacts from migrant workers from additional workforce, gender-based violence and impact on women group from workers from additional workforce, impacts on indigenous people, impact on children's right, land acquisition and resettlement impacts etc. Environmental and Social Management Plan and RAP (in separate cover) covers all possible mitigation and compensation measures including budgeting and monitoring.



83. The positive impact of the project would only be meaningful and sustainable, if the adverse impacts are minimized through environmental and social measures as prescribed in the report. It is also noted that there is no hill cutting and filling of any water body will be required for the extension work for the land port development.

84. The ESMP, its mitigation and monitoring programs and environmental specifications need to be included in the bidding documents for the project works. This will ensure that all potential bidders are aware of the environmental requirements of the project and its associated environmental costs. The EMP and all its requirements shall then be added to the contractor's contract thereby making implementation of the EMP a legal requirement.

85. The ESMP should be implemented timely and properly by concerned department. Monitoring of quality of surrounding air, drinking water and surface water of the Feni River should be conducted periodically and mitigation should be done accordingly. The local people should be engaged in the work during the construction and operation phase.

## APPENDICES

### Appendix I: Surface Water Quality Analysis Results

	<p><b>Government of the People's Republic of Bangladesh</b>  <b>Office of the Chief Chemist</b>  <b>Department of Public Health Engineering</b>  <b>Central Lab, 38-39, Mohakhali C/A, Dhaka-1212</b>                  Phone: 88-02-9881927, Fax: 88-02-9882003, Email: wqmsc_central_lab@yahoo.com</p>	
Lab memo: 1337/CC, DPHE, CL, Dhaka		Date: 05-07-2023

#### Physical/ Chemical/ Bacteriological Analysis of Water Sample

Sample ID: CEN2023060128	Sample Receiving date: 20-06-2023
Ref. Memo No: ECIL/2023/ Nilil & Dated: 20-06-2023	Sample Source: Surface Water
Sent by: Raj Kumar Biswas, Officer (Account & Admin), Envirocare International Ltd., Uttara, Dhaka	Dist: Khagrachari, Upa: Ramgarh
Care Taker: Envirocare International Ltd. (Sample: SW-01)	Union, Vill.: Mohamuni
Sample Collection date: 19-06-2023	Date of Testing: 20/06/2023-05/07/2023

#### LABORATORY TEST RESULTS:



Sl.#	Water quality parameters	Bangladesh Standard	Concentration present	Unit	Analysis Method	LOQ
1	Ammonia	0.5	0.19	mg/L	UVS	0.10
2	Biochemical Oxygen Demand (BOD)	0.2	32	mg/L	5 days Incubation	0.1
3	Chemical Oxygen Demand (COD)	4.0	136	mg/L	CRM	-
4	Dissolved Oxygen (DO)	6.0	2.65	mg/L	Multimeter	-
5	EC	-	690	µS/cm	Multimeter	-
6	Nitrogen (Nitrate)	10.0	2.1	mg/L	UVS	0.10
7	pH	6.5-8.5	7.2	-	pH Meter	-
8	Phosphate	6.0	13.3	mg/L	UVS	0.10
9	Total Dissolved Solid (TDS)	1000	345	mg/L	Multimeter	-
10	Total Suspended Solid (TSS)	10	2	mg/L	Gravimetric Method	-
11	Turbidity	10	8.4	NTU	Turbidity	-

Comments: Sample was collected & supplied by client.

N.B: AAS- Atomic Absorption Spectrophotometer, LOQ- Limit of Quantitation.

<p><b>Test Performed by:</b></p> <p>1.) Name: Md. Saiful Alam Khosru Designation: Sample Analyzer</p> <p>2.) Name: Taslima Akhter Designation: Sample Analyzer</p>	<p><b>Signature</b></p> <p><i>[Signature]</i> 05.07.2023</p> <p><i>[Signature]</i> 05.07.2023</p>	<p><b>Countersigned/ Approved by:</b></p> <p>1.) Name: Mita Sarker Designation: Senior Chemist</p> <p>2.) Name: Md. Biplab Hossain Designation: Chief Chemist</p>	<p><b>Signature</b></p> <p><i>[Signature]</i> 05/07/2023</p> <p><i>[Signature]</i> 05/07/2023</p> <p><b>Md. Biplab Hossain</b> Chief Chemist Department of Public Health Engineering Central Laboratory, Mohakhali, Dhaka</p>
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Appendix II: Ground Water Quality Analysis Results

	<p><b>Government of the People's Republic of Bangladesh</b>  <b>Office of the Chief Chemist</b>  <b>Department of Public Health Engineering</b>  <b>Central Lab, 38-39, Mohakhali C/A, Dhaka-1212</b>                  Phone: 88-02-9881927, Fax: 88-02-9882003, Email: wqmsc_central_lab@yahoo.com</p>	
Lab memo: 1337/CC, DPHE, CL, Dhaka		Date: 05-07-2023

**Physical/ Chemical/ Bacteriological Analysis of Water Sample**

Sample ID: CEN2023060127	Sample Receiving date: 20-06-2023
Ref. Memo No: ECIL/2023/ Nil & Dated: 20-06-2023	Sample Source: Ground Water
Sent by: Raj Kumar Biswas, Officer (Account & Admin), Envirocare International Ltd., Uttara, Dhaka	Dist: : Khagrachari, Upa: Ramgarh
Care Taker: Envirocare International Ltd. (Sample: GW-01)	Union:,Vill.: Mohamuni
Sample Collection date: 19-06-2023	Date of Testing: 20/06/2023-05/07/2023

**LABORATORY TEST RESULTS:**

Sl.#	Water quality parameters	Bangladesh Standard	Concentration present	Unit	Analysis Method	LOQ
1	Alkalinity	-	44	mg/L	Titrimetric	-
2	Arsenic (As)	0.05	0.001	mg/L	AAS	0.001
3	Chloride	150-600	52	mg/L	Titrimetric	-
4	EC	-	517	µS/cm	Multimeter	-
5	Iron (Fe)	0.3-1	0.26	mg/L	AAS	0.05
6	Lead (Pb)	0.05	0.002	mg/L	AAS	0.001
7	Magnesium (Mg)	30-35	20	mg/L	AAS	0.05
8	pH	6.5-8.5	7.5	-	pH Meter	-
9	Total Dissolved Solid (TDS)	1000	264	mg/L	Multimeter	-

Comments: Sample was collected & supplied by client.  
 N.B: AAS- Atomic Absorption Spectrophotometer, LOQ- Limit of Quantitation.

<p><b>Test Performed by:</b></p> <p>1.) Name: Md. Saiful Alam Khosru                  Designation: Sample Analyzer</p> <p>2.) Name: Taslima Akhter                  Designation: Sample Analyzer</p>	<p><b>Signature</b></p> <p><i>[Signature]</i> 05.07.2023</p> <p><i>[Signature]</i> 05.07.2023</p>	<p><b>Countersigned/ Approved by:</b></p> <p>1.) Name: Mita Sarker                  Designation: Senior Chemist</p> <p>2.) Name: Md. Biplab Hossain                  Designation: Chief Chemist</p>	<p><b>Signature</b></p> <p><i>[Signature]</i> 05.07.2023</p> <p><i>[Signature]</i> 05/07/2023</p> <p><b>Md. Biplab Hossain</b>                  Chief Chemist                  Department of Public Health Engineering                  Central Laboratory, Mohakhali, Dhaka</p>
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