



BANGLADESH LAND PORT AUTHORITY
Bangladesh Regional Connectivity Project 1

IDA Credit No. 6002-BD



Environmental & Social Impact Assessment
For
Proposed Extension Work at Sheola Land Port

Final Report
January 2024

CONTENTS

1	INTRODUCTION	1
1.1	Background	1
1.2	Scope of Work and Study Objectives	1
1.3	Methodology Adopted for this ESIA	1
2	Legal and Policy Framework.....	2
2.1	General	2
2.2	Relevant National Legal Instruments	2
2.3	World Bank Environmental and Social Safeguard Policies	4
2.4	Environmental, Health and Safety Guidelines	4
3	PROJECT DESCRIPTION.....	5
3.1	Setting and Current Situation of the Proposed Area.....	5
3.2	The Envisaged Project Activities.....	7
4	ENVIRONMENTAL AND SOCIAL BASELINE	13
4.1	Environmental Setting	13
4.2	Ambient Air Quality	13
4.3	Ambient Noise Quality.....	14
4.4	Water Quality	14
4.5	Ecological Resources.....	14
4.6	Socio-economic Profile of the PAPs	14
5	Anticipated Environmental and Social Impacts.....	17
5.1	Environmental Impacts during Construction Phase.....	17
5.2	Social Impacts during Construction Phase	18
5.3	Impacts during operation phase.....	19
5.4	Climate Change Issue.....	19
6	STAKEHOLDER CONSULTATION AND DISCLOSURE.....	20
6.1	Approach, Methodology and Tools Used for Consultation	20
6.2	Summary and Findings of the Consultation	21
7	GRIEVANCE REDRESS MECHANISM.....	21
8	ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN	22
8.1	Inclusion of ESMP in the Contract Documents	22
8.2	Environmental and Social Mitigation Plan	23
8.3	Environmental Management Budget.....	30
9	CONCLUSION AND RECOMMENDATION	32

LIST OF FIGURES

Figure 1: Layout and location of proposed land for extension (drawn in red line).....	6
Figure 2: Master Plan of the Sheola Land Port	8
Figure 3: Land Port Building with Layout Plan Sheola land Port	9
Figure 4: Passenger Terminal Building with Layout Plan Sheola land Port.....	10

LIST OF PHOTOGRAPHS

Photograph 1: Some Photographs of the Consultation Meeting	20
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LIST OF TABLES

Table 1: Summary of Government Laws, Regulations Applicable to the Project.....	2
Table 2: List utilities and covered area	7
Table 3: Tentative Work Schedule for Sheola Land Port.....	11
Table 4: Existing Environmental Settings	13
Table 5: Distribution of affected people by age category	14
Table 6: Household Members Involved in Occupation	15
Table 7: Gender-segregated Distribution of Household Members Involved in Occupation	15
Table 8: Distribution of earning member by income ranges.....	15
Table 9: Status of Educational Attainment of Household Members (gender-segregated)	16
Table 10: Marital Status of Household Members	16
Table 11: List of GRC members	22
Table 12: Environmental and Social Mitigation Plan	23
Table 13: Environmental Mitigation Costs during Construction of extension work of Sheola Land Port	30
Table 14: Environmental Monitoring Costs during Construction of extension work of Sheola Land Port	31
Table 15: Environmental Monitoring Costs during O&M Phase of extension work of Sheola Land Port	31

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 the 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. Sheola Land Port is located at the village of Borogram of Beanibazar Upazila of Sylhet district. The land port was developed around the existing Customs Station (LCS). Initially, 22.02 acres of land has been acquired and accordingly, development work has been continuing according to the master plan but excluding the no man’s land (150 yards from zero line. At this stage land port activities are partially integrated jointly with both the countries and operational works are going on. However, to make it operational in full the existing port area needs to be expanded to integrate some other facilities like new comfortable residential and official buildings as well as for developing service area near the zero line. In the meantime, meaningful discussion is occurred regarding the development work in no man’s land between the countries and positive decision will be made soon. Thus, BLPA intends to acquire 3.78 acres of land additionally. To make the full functional land port the proposed additional facilities are i) Guest House, ii) Passenger Terminal, iii) Watch Tower, iv) Toilet Complex, v) Roadway facilities, vi) Stack Yard, vii) Drainage Network and Walkway, viii) Greenery Area, and ix) Additional Boundary wall is proposed in additional land. In this context, to incorporate the related risks and impacts along mitigation and compensation measures, this ESIA has been prepared.

1.2 Scope of Work and Study Objectives

3. The existing Environmental and Social Impact Assessment for Sheola 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 & existing ESIA Report.

4. The specific objectives of the study are:

- Establishing the environmental and social baseline in the proposed 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 activity;
- 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 for the environmental and social management.

1.3 Methodology Adopted for this ESIA

5. The study methodology comprised the following activities:

- Desktop Study;
- Field Investigation and Data Collection;
- Data Analysis and Report Writing.

6. 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.

7. Field Investigation and Data Collection include:

- Environmental and social data collection;
- Identification of important environmental features (IEFs);
- Household survey of the landowners/PAPs to be affected due to land acquisition;
- Formal and informal consultation was conducted by the study team.

8. Data Analysis and Report Writing: The data and information collected from all the sources (literature review, secondary and primary data, data available from the existing monitoring result conducted by the existing contractor, 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

9. 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 activities 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

10. 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

Laws, Regulations and Standards/ Legal Instruments	Brief Description/Key Features	Responsible Agency	Relevance
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]	Ongoing development of the Sheola land port was considered as "Orange B" and accordingly ECC obtained from DoE. As per the Environment Conservation Rules 2023 it is categorise as "Orange". Following the ECR 2023 renewal of ECC for development of Sheola land port as "Orange" obtained from DoE in 2023.

Laws, Regulations and Standards/ Legal Instruments	Brief Description/Key Features	Responsible Agency	Relevance
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"> • Protection and restoration of water resources; • Protection of water quality including strengthening regulations concerning industrial effluents; • Participation of local communities in water sector development. 	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"> • Conserve and restore the biodiversity; • Strategy and Action - Maintain and improve environmental stability of ecosystems. 	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 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"> • Reduction of pollution from all kinds of vehicles for environmental protection; • Institutional strengthening of the transport sector 	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 & maintenance work.
The Vehicle Act, 1927 The Motor Vehicles Ordinance, 1983 The Bengal Motor Vehicle Rules, 1940	<ul style="list-style-type: none"> • Exhaust emissions; • Vehicular air and noise pollution; • Road/traffic safety; • Vehicle licensing and registration; • Fitness of motor vehicles; • Projecting bylaws. 	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 facilities 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.

Laws, Regulations and Standards/ Legal Instruments	Brief Description/Key Features	Responsible Agency	Relevance
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.

11. 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

12. The OP/BP 4.01 Environmental Assessment triggers for this project. Due to land acquisition, OP/BP 4.12 Involuntary Resettlement is triggered. The core objectives of OP 4.12 and OP/BP 4.01 are to mitigate economic, social, and environmental risks and to restore livelihoods of affected persons. There are no indigenous people. So social safeguards policies OP/BP 4.10 Indigenous People is not trigger for this project. In addition to the OP/BP 4.01, the labour influx guideline 2016 is also application for this project.

2.4 Environmental, Health and Safety Guidelines

13. The Environment, Health, and Safety (EHS) Guidelines¹ 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.

14. 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;

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

- 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

15. Initially 22.02 acres of land was acquired, and in this area most of the structures with facilities were developed and inaugurated of Sheola land port partially, accordingly operational works are partially going on. RAP was prepared for that portion of acquired land, approved, and implemented as well. Compensation to the Tittle-Holders and Non-Tittle Holders is completed with satisfaction of all PAPs. The newly proposed land is in two different sides of the previously acquired land or the port area. For the acquisition of 3.78 acres of land, a RAP is being prepared and will be implemented prior to the civil work. Thus, one side extends up to the Bangladesh-India border land, and the rest of the proposed land acquisition extends where the residential and office building is located which is shown with green and red ink separately in Figure-1.

16. In the proposed 3.78 acres area, there are 5 homesteads covers of 0.265 acres of land out of total proposed land. The rest land proposed for the extension is fallow and located near the zero line. There are some trees at the proposed homestead area. There is a pond in 0.12 acres as well which is not currently used for fish cultivation. This pond will be developed and keep as a water reservoir in the revised master plan.

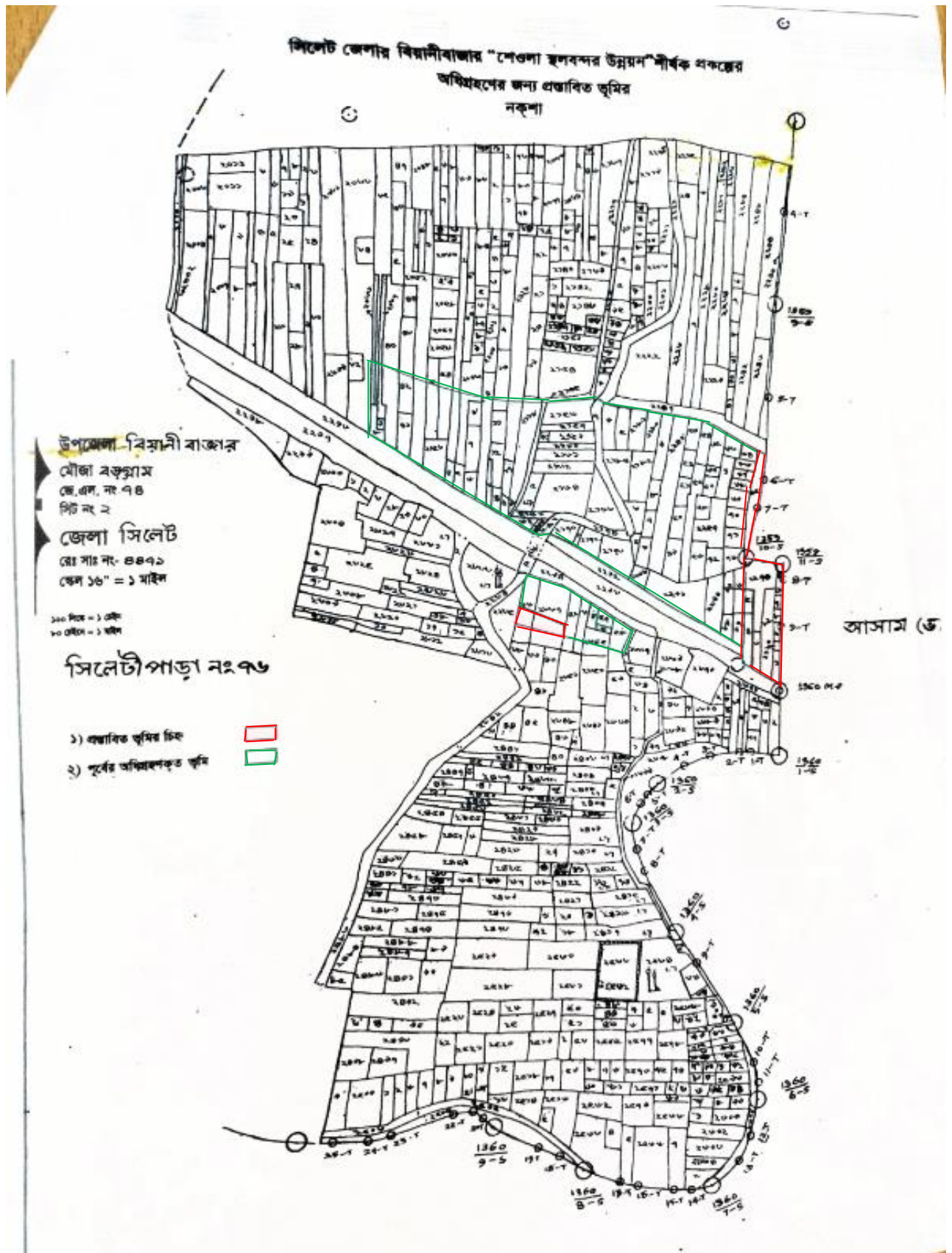


Figure 1: Layout and location of proposed land for extension (drawn in red line)

3.2 The Envisaged Project Activities

17. As per the Complete Master Plan of Sheola land port new residential and official buildings will be constructed and as well as service area will be developed near the zero line in the proposed area. The Master Plan of Sheola Land Port (Figure 2) is shown below. International standard Passenger Terminal Building, More Watch Tower, Toilet Complex, Guest Housing Facilities, Wider Roadway, Stack Yard, Drainage Network, Walkway, Adequate Greenery Area, and additional boundary walls. 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	International Standard Passenger Terminal Building	Sqm	208.70
2	Additional Watch Tower	Sqm	28.00
3	Drainage Network and Walkway	Sqm	2013.00
4	Additional boundary Wall	meter	1916.00
5	Guest House Facilities	Sqm	372.00
6	Toilet Complex	Sqm	140.00
7	Roadway Network and Stack Yard	Sqm	8,660.00
8	Greenery Area	Sqm	88.00

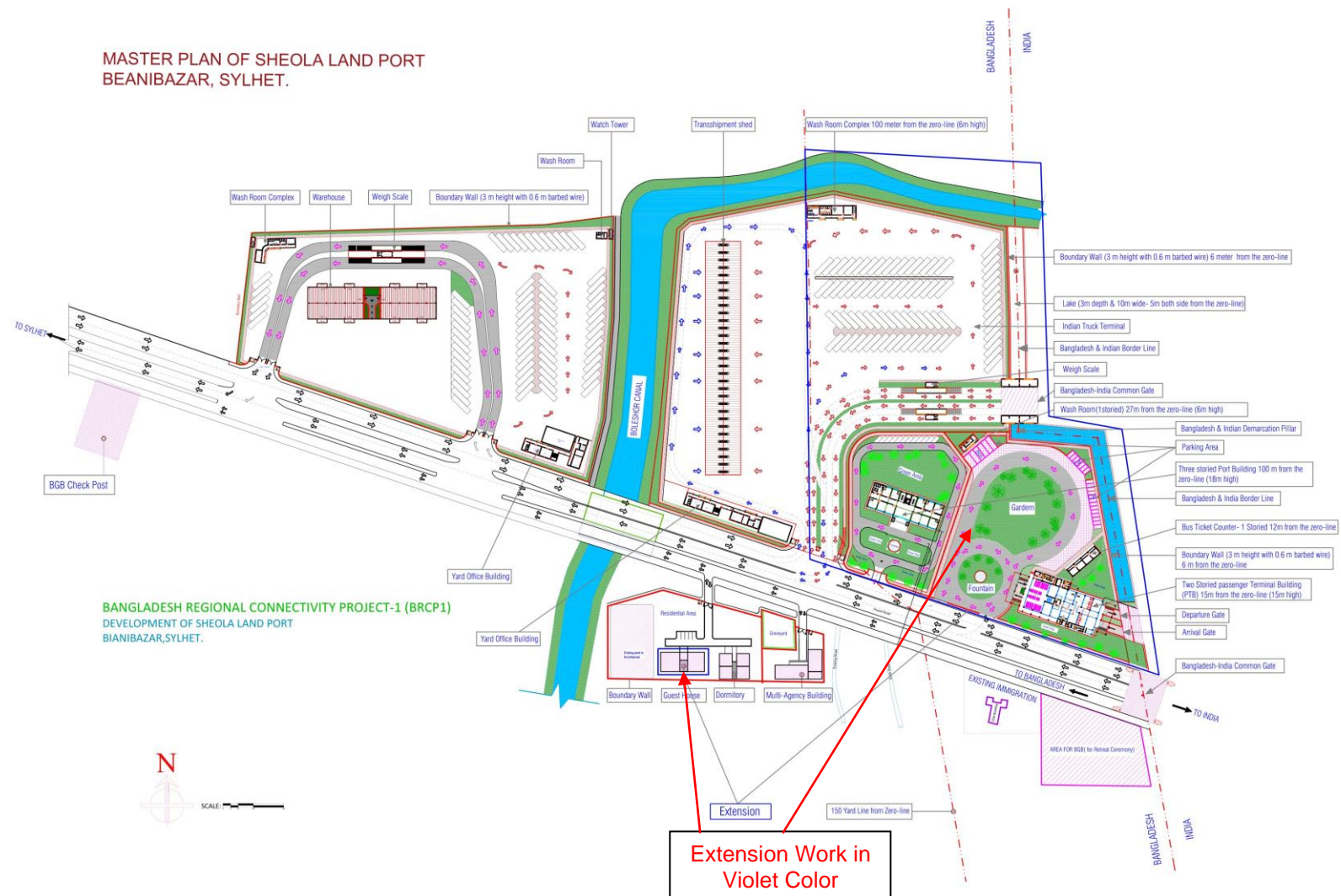


Figure 2: Master Plan of the Sheola Land Port

18. The masterplan has been prepared to integrate all the concerned governmental authority with land port stakeholders under the single coverage for smooth operation of the land port activities.

19. The general activities of the proposed extension work of project area include construction of the semi-pucca site office and construction of the labor 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 with 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 Sheola land port. The tentative civil works schedule is included as per the following table below.

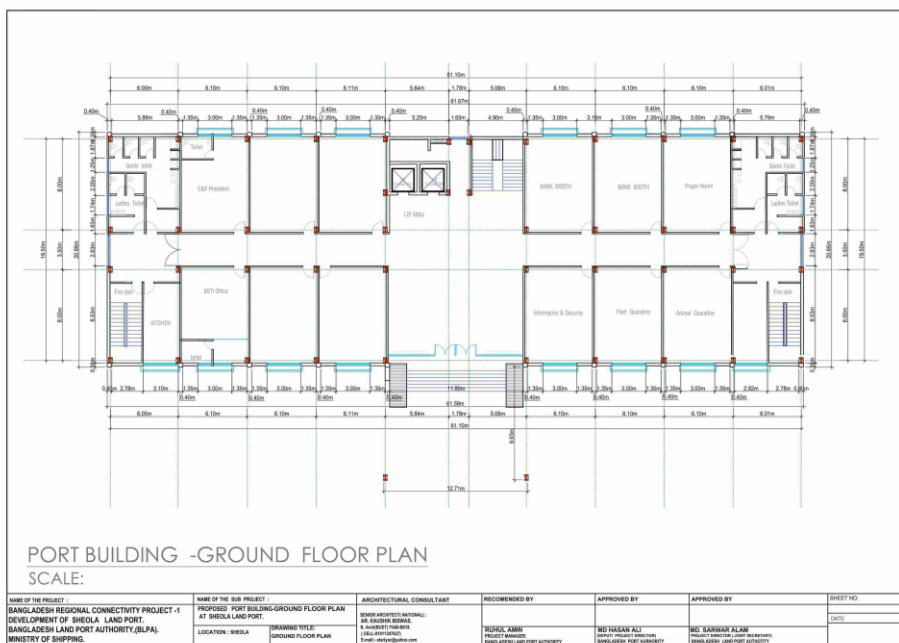


Figure 3: Land Port Building with Layout Plan Sheola land Port



Figure 4: Passenger Terminal Building with Layout Plan Sheola land Port

Table 3: Tentative Work Schedule for Sheola 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			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

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 labour 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 labour 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
Location	Sheola Land Port is located at the Village of Borogram, Beanibazar Upazila under Sylhet district near the existing Customs Station (LCS). GPS: 24.874458° N, 92.245069° E Connectivity: India Side: Sutarkandi, Karimganj, Assam Bangladesh Side: Sheola, Beanibazar, Sylhet.
Total Area	3.78 acres
Agro ecological Zone	Surma- Kushiya Floodplain
Physiography	Surma- Kushiya Floodplain. Most of the proposed area for Sheola land port is in the catchment area of Kushiya river.
Geology	The port area is underlain by thick deposits of alluvial sediments. The surface soils are usually grey silt loams and silty clay loams.
Flood	River/Flash flood area of Bangladesh. The river Kushiya flows beside the project.
Climate and Meteorology	The project area is in the North-Eastern Climatic Zone of Bangladesh. The climate is sub-tropical with three seasons: namely summer from March to May, monsoon from June to October, and winter season from November to February. The average monthly temperature at Sylhet varies from 16.8°C to 29.2°C. Maximum temperature occurs in the month of April and minimum temperature in January. Mean annual rainfall in this region is about 3,851 mm at Sylhet. About 70 percent of annual rainfall occurs during May to August. The average wind speed varies from 2.36 m/s to 3.5 m/s.
Seismic Zone	Located in most active earthquake Zone in Bangladesh.
Cyclone Effect	The proposed project is in a cyclone risk free area.
Forests	There are some trees, vegetation at the proposed area
Major Water Body	Kushiya River, existing Dubagh Khal and Dubagh beel
Ecologically Critical Area	None
Environmental and Social Hotspots	River, homestead and natural vegetation, educational institute, religious and historical sites etc.

4.2 Ambient Air Quality

25. Except vehicular traffic and traffic induced impact on the degradation of the air quality; there are no major sources of air pollution within the project influence area. During the ESIA Study and environmental monitoring during first phase construction, ambient air quality of the project area has been measured for the parameters SPM, PM₁₀, PM_{2.5}, CO, CO₂, NO_x, SO_x. It has been observed that the value of SPM, PM₁₀, PM_{2.5}, CO, CO₂, NO_x, SO_x are within maximum permissible limit of Bangladesh Air Pollution Rules 2022, WHO, US EPA and OSHA guidelines.

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 ESIA study and environmental monitoring during first phase construction, 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. There are no likely major industrial pollution sources that degrade the surface water quality and ground water quality in the study area. During, 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 WHO Standards.

4.5 Ecological Resources

28. 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.

29. The study area has fallen under bio-ecological zone of Surma-Kushiyara flood plain. 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 110 trees of different varieties and sizes are counted during the ecological survey in the proposed area. Among them, 28 are large, 13 mediums, 61 small trees and 8 saplings including of timber, fruit, and medicinal trees.

4.6 Socio-economic Profile of the PAPs

30. 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

31. There are 5 households to be affected by the land acquisition, comprising of 22 people. Of them, 12 are male member and 10 are female members. The following table shows age-wise distribution of affected people.

Table 5: Distribution of affected people by age category

Age Group	Total		Male		Female	
	No.	%	No.	%	No.	%
Under 15	5	23	4	18	1	5
15-29	9	41	5	23	4	18
30-44	3	14	-	-	3	14
45-59	4	18	2	9	2	9
Above 60	1	5	1	5	-	-
Total	22	100	12	55	10	45

Source: Census, 2023

Land ownership and control

32. All land under the acquisition is privately owned. These affected people have a developed land for homestead land in the same area (village) also they have a considerable quantity of cultivable land in the same village.

Livelihoods

33. The following table shows that agriculture is the main occupation of household members. Only one person is involved in salaried jobs and in business. 48% of household members are students. Women, particularly wives of household heads are involved in household work. Only one household member whose primary occupation is business adopted agriculture as his secondary occupation.

Table 6: Household Members Involved in Occupation

Type of Main Occupation	Involvement of Household Members in Occupation	
	No.	%
Agriculture	4	19
Salaried employee	1	5
Housewife	4	19
Business	1	5
Unemployed	1	5
Students	10	48
Total	21	100

Source: Census, 2023

Table 7: Gender-segregated Distribution of Household Members Involved in Occupation

Type of Main Occupation	Male		Female	
	No.	%	No.	%
Agriculture	3	14	1	5
Salaried employee	1	5	-	-
Housewife	-	-	4	19
Business	1	5	-	-
Unemployed	-	-	1	5
Students	6	29	4	19
Total	11	52	10	48

Source: Census, 2023

Income and expenditure

34. Based on the international poverty line² of 1.90\$ per day, no households are found below the poverty line. Only one household was found having income of below BDT 10,000 monthly income. The income of remaining households belongs to the range of BDT 10,000 to 50,000.

Table 8: Distribution of earning member by income ranges

Income Range	No. of households	Percentage
<10000	1	20
10000-30000	3	60
30000 Above	1	20
Total	5	100

Source: Census, 2023

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

Housing condition and amenities

35. All affected households are semi-pucca. Households have basic amenities such as sanitary latrines with separate septic tanks, grid electricity connection and solar electricity facility. Gas is used as cooking fuel for all households.

Education

36. The status of educational attainment of male and female is almost similar. 4 male members (44%) and 3 female members (30%) were found illiterate. On the other hand, two male members and two female members were found are pursuing their undergraduate level study. There are no indigenous people living in and around the project area. The people living around the project area can understand the Bangla language by reading, writing, and speaking.

Table 9: Status of Educational Attainment of Household Members (gender-segregated)

Education Level	Male		Female	
	No.	%	No.	%
Illiterate	4	44	3	30
Literate (can sign only)	-	-	2	20
Hafez (memorization of Quran)	2	22	2	20
SSC	-	-	1	10
HSC	1	11	-	-
Undergraduate	2	22	2	20
Total	9	100	10	100

Source: Census, 2023

Marital status

37. The following table shows that the number of unmarried male and female is less than that of married members. Thus, 3 male and female members are married.

Table 10: Marital Status of Household Members

Marital Status	Male		Female	
	No.	%	No.	%
Married	3	25	3	38
Unmarried	9	75	5	63
Total	12	100	8	100

Source: Census, 2023

Disability

38. One male member of household aged 13 years was reported as physically challenged.

5 Anticipated Environmental and Social Impacts

39. The environmental impacts during construction phase due to the proposed extension work 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.

40. 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.

41. This section only covers the additional impacts to be generated from the extension work.

5.1 Environmental Impacts during Construction Phase

Sitting of Additional Construction Camp

42. 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.

43. 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.

44. 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.

45. Site clearing will require cutting of 110 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:

46. 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 adjacent canal and even in the river Kushiyara through the drainage channel. Even the people engaged in the construction activities and local communities might endanger the physical and human habitats of the area.

Visual Amenity

47. 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.

5.2 Social Impacts during Construction Phase

Impacts due to Labour Influx from additional workforce.

48. **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

49. **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.

50. 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.

51. 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 on project related persons due to the implementation of 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. 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.

Impact on Children's right:

52. 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 labor, the contractor can exploit them. This issue should be carefully handled at the project site.

53. 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, contractors can avoid the engagement of the child labor force. In case of any child labour engagement to be required considering the financial crisis of the respective family, the contractor provides them with 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

54. **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.

55. The proposed 3.78-acre land acquisition includes 5 homesteads on 0.265 acres of land. In fact, the Landowners of these homesteads had been affected during the previous land acquisition and moved to their current homesteads which again are going to be acquired. The remaining land under the proposed acquisition is located close to the Bangladesh-India borderland, popularly called zero mile or no man's land, which is fallow.

56. The proposed 3.78-acre land includes 5 homesteads that will be affected. In addition, 7664 sft of different structures and one pond will be affected. Besides, a total of 110 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

57. 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.

58. 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

59. 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 Sheola land port.

5.4 Climate Change Issue

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

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

Climate Change Impact on Flooding

61. The secondary impacts of climate change are not only in magnitude but also in frequency. For example, there are chances of not only increasing flood water levels but also reduction of flood returns periods. This indicates that a 20-year return period flood might become a 15-year return period flood under climate change scenarios.

Climate Change Impact on Drainage

62. Due to climate change the intensity and duration of the rainfall may dramatically increase which will impact on the internal drainage system for short period of time. An adequate drainage system will be designed in the project area and the drainage problem will be mitigated as well. As there is existing Dubagh Canal flowing through the land port area developed with slope protection in first phase, excess surface run-off due to the heavy rain will be drain out through this canal to the Dubagj beel.

Greenhouse Gas (GHG)

63. 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 (CO₂) emissions resulting from the combustion of petroleum-based products, like gasoline and diesel fuel, in internal combustion engines. Relatively small amounts of methane (CH₄) and nitrous oxide (N₂O) 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 DISCLOSER

6.1 Approach, Methodology and Tools Used for Consultation

64. 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.

65. A consultation with the project affected people was 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.

66. Multiple tools and methods have been used during the consultation meetings. These include the key informant interviews and walk through interview (3 interviews were conducted); FGDs with various occupational/interest groups (2 FGDs were conducted with 15 participants); walk-through informal group consultation. In total, there are 25 people were consulted among them male 20 and 5 female participants. The consultation activities are shown in the following photographs.



Photograph 1: Some Photographs of the Consultation Meeting

6.2 Summary and Findings of the Consultation

67. 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 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.

68. It is noted that ESIA of 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 Sheola land port. Existing people in around the project area can read, speak and understand Bangla.

7 GRIEVANCE REDRESS MECHANISM

69. BLPA has already established a local level grievance redress committee (GRC) for Sheola Land Port to receive and resolve any complaints related to land acquisition and other issues. The contact information is already provided in the project area and details of the project GRM are given in the main ESIA. The scope of work of the committee and process of receiving the complaint with remedial procedure is already described. There are six members of the committee who are responsible for receiving complaints and resolving all issues including GVB, SEA/SH related grievances. This committee will also be responsible for receiving complaints and resolving the proposed land acquisition and associated development works. The list of members is given in table 11 below:

Table 11: List of GRC members

Name	Position
Md. Aminul Islam, Assistant Project Director	Chairman
Abdus Salam, Chairman, UP, Dubag, Beanibazar	Member
Shahida Aktar, Women member, UP, Dubag	Member
Sultan Ahmed, representative from PAP,	Member
Rakib Ahmed Choudhury representative from PAP	Member
Ruhul Amin, Project Manager, BRCP-1, BLPA	Member secretary

8 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

8.1 Inclusion of ESMP in the Contract Documents

70. ESMP with estimated cost for the proposed extension also 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.

71. The environmental codes of practice (ECoPs) were listed in the main ESIA study and site-specific management plans were prepared for the main project also valid for the extension work.

8.2 Environmental and Social Mitigation Plan

72. The anticipated environmental and social impacts and corresponding mitigation measures for the proposed extension in different phases have been outlined in Table 12.

Table 12: Environmental and Social Mitigation Plan

Activity/Issues /Parameters	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
Pre-Construction Phase & Construction Phase			
Climate Change	<ul style="list-style-type: none"> ● Climate change induced impacts (e.g. flooding, internal drainage congestion); and ● GHG due to burning fossil fuel for vehicle and equipment operation. 	<ul style="list-style-type: none"> ● Consider climate change study output for the design of drainage system; ● Effective management of project vehicle and equipment; ● Planting of new trees can help mitigate against climate change by removing CO₂ from the atmosphere. 	<p>Construction Supervision Consultant (CSC) Supervision by BLPA</p>
Land Acquisition	<ul style="list-style-type: none"> ● Land acquisition will cause removal of structures, resettlement of affected people, removal of vegetation, relocation of utilities and inconvenience to the local people. 	<ul style="list-style-type: none"> ● Acquire minimal area of land that meets the requirement of port. ● Allocation of proper compensation according to Resettlement Plan (RP); ● Landowners will have to be informed prior to land requisition and land requisition has to be done making written agreement between the two parties. 	<p>DC/UNO/GRC Supervision by BLPA/CSC</p>
Removal of Structures	<ul style="list-style-type: none"> ● The project will require removal of the semi-pucca structures due to land acquisition. Removal of these structures will cause disturbances to the people; ● Potential health and safety risk and accidents due to removing of the semi-pucca, and utilities (mainly electrical & gas connection). 	<ul style="list-style-type: none"> ● PAPs must be informed through notice in time as though they can get enough time to make plan for relocation/shifting; and ● PAPs will have to be properly compensated and relocated as per the RP before commencing removal of infrastructure; ● Electric power and all services should be shut off within the structure before demolition work to be started; ● Site should be fenced and screened to protect site from strong winds and to contain dust; ● Ensure use of the personal protective equipment where applicable; ● Ensure careful operation of the machineries and equipment; ● Demolition work should be started from roof and then side brick wall, fencing; ● Demolition work should avoid at schooling time and at nighttime and should follow normal working hour; ● The demolition works shall be taken not any nuisance by the way of noise, dust and vibration to the surrounding environment; ● Cover the exposed loose waste with much fabric. ● Debris created after demolition may be used at the bottom of the filling area. 	<p>DC/UNO/GRC Supervision by BLPA/CSC</p>
Relocation of Utilities	<ul style="list-style-type: none"> ● Relocation of utilities like electricity line & meter, water supply system will temporarily cause 	<ul style="list-style-type: none"> ● Prior consultation with the authorities of utilities is essential regarding relocating the utilities; ● Written approval has to be obtained for relocation; and 	<p>Contractor/Respective authority of utility Supervision by</p>

Activity/Issues /Parameters	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
	inconvenience to the users.	<ul style="list-style-type: none"> ● Safety has to be ensured while relocating the utilities. 	BLPA/CSC
Tree Cutting and Clearing of Vegetation	<ul style="list-style-type: none"> ● Permanent loss of trees; ● Loss of habitat. 	<ul style="list-style-type: none"> ● The loss caused due to felling of 110 trees because of the project activities will be compensated by planting 250 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. ● Details of tree plantation plan have been given during prior to the tree plantation work. 	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"> ● Sitting of construction camp may cause-physical and visual impact on the area; ● Construction process will take more than 1 year, with the result that the camps will take on a semi-permanent appearance; ● Most important aspects are pollution risk of soil and surface water due to sanitation of the labor camps and wastes from the camps. 	<ul style="list-style-type: none"> ● Construction and operation of workers' accommodation and labor camp should follow IFC/EBRD Guidance Note on Workers' Accommodation; ● The construction camps should be located within the project boundary; ● The crushing plants, asphalt hot mix and batching plants also should be located within the project boundary; ● The living accommodation and ancillary facilities for labor shall be erected and maintained to standards and scales; ● The camps must be located such that the drainage from and through the camps will not endanger to any surface water body; ● The contractor will ensure no labor room should be overcrowded; ● The labor shed should have adequate ventilation facilities and standard living condition; ● Construction of sanitary latrine considering 10 persons for one toilet at the labor shed and separate toilet for male and female; ● The contractor will ensure safe drinking water supply facilities; ● 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; ● The contractor will provide temporary surface drainage facilities at the labor camp; ● There shall be adequate supply of water in the latrines and urinals; ● 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 	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 area; <ul style="list-style-type: none"> ● 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. 	
Transportation, handling and storage and pollution from the additional construction materials	<ul style="list-style-type: none"> ● Construction materials transportation, handling and storage risks associated to the occupational health and safety; ● Improper stockpiles of construction materials also may degrade the surrounding environment; ● 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 in the surface water. 	<ul style="list-style-type: none"> ● 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; ● Fuels, lubricants, and other hazardous materials should store over raised platforms and not directly on the ground; ● Raised platform (brick soling with neat cement finishing) shall be constructed prior to start working; ● 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; ● Maintain adequate moisture content of sand during transportation and handling; ● Carry the materials especially loose soil and sand with adequate cover; ● Avoid headloads for carrying soil, construction materials and construction equipment. 	Contractor Supervision by BLPA/CSC
Pollution from Waste and Waste management	<ul style="list-style-type: none"> ● Dismantling of structures will generate solid waste; ● Kitchen and sewage wastes from labor camp will cause growth of flies and water born germs; ● Spreading of disease due to contamination of environment. 	<ul style="list-style-type: none"> ● Waste will be segregated for recycling and composting; ● Segregate storage for different types of wastes, such as hazardous, non-hazardous recyclable construction material, plastic, paper, etc. to facilitate proper disposal; ● 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; ● Wooden and metal window & door and other furniture should be relocated for re-use; ● Scrap metal waste generated from construction activities will be collected and stored separately in a stack yard and sold to local recyclers; ● 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; ● Construction waste will be used as backfill at the bottom of the back filling area; ● Hazardous waste viz. waste oil etc. will be collected and stored in paved and bounded area and subsequently sold to authorized recyclers; ● Garbage and debris will be reused for site filling and leveling operation to the maximum extent possible; 	Contractor Supervision by BLPA/CSC

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

Activity/Issues /Parameters	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
	water, electricity, other fuel for cooking, depletion of the water supply, sewage and wastewater generation, degradation of the air quality, waste generation.	transmitted diseases (STDs) and gender-based violence and sexual exploitation and abuse (GVB/SEA); ● Confidential record and solution of the gender-based violence and sexual exploitation and abuse (GVB/SEA).	
Community Health Impacts from Migrant Workers from additional workforce	<ul style="list-style-type: none"> ● 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. 	<ul style="list-style-type: none"> ● Engage maximum local manpower to avoid large scale migration of labour; ● Provision of infrastructure and amenities for migrants to avoid dependency on local resources; ● Adequate sanitation facility at labour camps to maintain hygiene and minimize spread of diseases; ● Creating awareness about local tradition and culture among the migrant and encouraging respect for same; ● Providing awareness training regarding sexually transmitted diseases among the migrant population; ● Proper waste disposal from the camp and construction activity to maintain general hygiene in the area; ● Avoid unnecessary movement of vehicles through settlement areas to avoid traffic safety related issues. 	Contractor Supervision by BLPA/CSC
Impact on Women Group and gender issue from additional workforce	<ul style="list-style-type: none"> ● 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). 	<ul style="list-style-type: none"> ● Training will be provided to the contractors, supervisors and workers; ● Workshops with the surrounding community people, leaders will be arranged; ● Periodical leave provision for the migrated workers should be ensured so that they can meet their family regularly; ● Grievance redress mechanism has been established at Silo site. 	Contractor Supervision by BLPA/CSC
Children's right	<ul style="list-style-type: none"> ● Child labor may be engaged during construction and the contractor can exploit them. 	<ul style="list-style-type: none"> ● Contractor shall avoid the engagement of child labor force; ● Patrolling periodically to check for any child labor; ● Contractor shall provide ID to the workers and maintain on-site labor log. ● During employment of labor NID will be checked for verification of age. 	Contractor Supervision by BLPA/CSC
Operation Phase			
Landscape and Tree Plantation	<ul style="list-style-type: none"> ● After completion of the construction work, trees will have to be planted which will provide positive impact on the natural environment; ● Inappropriate selection of tree species and plantation location may not ensure the inherent objective of the tree plantation 	<ul style="list-style-type: none"> ● Prior to the tree plantation, with the assistance from the SC and contractor, BLPA will finalize the tree plantation plan; ● Different species as per the tree plantation plan will be planted at the designated places; ● 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; ● The scope of natural rehabilitation of the local wildlife to the habitat will be created as a result of the tree plantation and growth of the vegetation. 	Operator/ BLPA

Activity/Issues /Parameters	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
	<p>plan;</p> <ul style="list-style-type: none"> ● 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. 	<ul style="list-style-type: none"> ● 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; ● A proper Maintenance and Operation (O&M) Plan should be prepared and act accordingly during operation stage. 	
Sewage, Water pollution and pollution from waste and waste management	<ul style="list-style-type: none"> ● Causes water borne diseases; ● Improper management of solid wastes may lead to degradation of aesthetic view and quality of soil & water quality; ● Bad odor due to non-removal of waste regularly will also cause unhealthy conditions including attracting nuisance animals such as flies and mosquitoes; ● Wastes will also cause human health diseases; ● Like water, air and land pollution solid waste may cause diseases to man and other lives; ● Disease vector proliferation, sanitary problems. 	<ul style="list-style-type: none"> ● Maintenance of septic tanks, soak wells, pipes, etc. as and when required; ● In request of the Port Authority concern section of DPHE will collect liquid waste from septic tank and soak well and finally dispose to their selected place for treatment; and ● Regular monitoring of water quality if possible; ● Setting up of separate covered system waste collectors (one for organic and other for inorganic wastes); ● The inorganic wastes (re-usable) should be sold; ● The organic wastes should be disposed in the covered drums placed at designated area and those waste will be collected for final disposal; ● These collectors should be emptied, cleaned and replaced by the designated persons regularly; ● Provision for incinerator for plastic waste. ● Setting up of separate waste collectors at different points; ● Regular cleaning and replacing of waste collectors; ● Waste disposal at a safe place; ● Capacity of local landfill/dumping site need to increase for dumping of the extra waste generated from regular activities of land port; ● Encourage waste sorting by the facility users. 	Operator/ BLPA
Risk from Chemical Storage	<ul style="list-style-type: none"> ● Fire safety risks from the continued use of onsite vehicles to the storage of flammable materials. 	<ul style="list-style-type: none"> ● BLPA needs to put in place solutions for safe and secure storage of all hazardous material at Sheola land port; ● 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; ● All chemicals must be stored in a safe, secure location; ● Shelves should be level, stable, and secured to the wall or another stable; ● Store chemicals away from direct sunlight, sources of heat, and egress pathways; ● Hazardous chemicals must be stored below eye level; ● Do not store chemicals on the floor, window ledges, or balconies; ● Keep containers closed unless you are dispensing a chemical or adding to the 	Operator/ BLPA

Activity/Issues /Parameters	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
		container; ● Provide secondary containment for liquids whenever possible. Dishpans or polyethylene trays work; ● Don't store chemicals in a sink or fume hood; ● Label containers, and be sure container is compatible with the chemical; ● Use rated storage cabinets or safety cans whenever possible—required for >10 gal. of flammables; ● Cold rooms, refrigerators, and freezers have additional requirements, particularly for flammables.	

73. 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 included. Mitigation plan for social parameters is 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

74. 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 13: Environmental Mitigation Costs during Construction of extension work of Sheola 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	-	-	200,000
02	Maintenance and protection of traffic including construction of diversion road, warning signs, posting of signboard detaining project activities	LS	-	-	100,000
03	Campsite waste disposal facilities	Nos.	1	50,000	50,000
04	First aid box for treatment of injuries on emergency situations	Nos.	1	50,000	50,000
05	Drinking water supply to the Workers and Staffs during construction period	Nos.	1	100,000	100,000
06	Sanitary Facilities	Nos.	6	25,000	150,000
07	Tree plantation and green area development plan	Nos.	250	1000	250,000
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	-	-	100,000
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	-	-	200,000
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	1000	20	200,000
11	Orientation to the technical personnel/ construction worker associated with the port about the key issues of ESMP & Environmental Monitoring	LS	-	-	100,000
12	Capacity building of BLPA staff for general and cumulative impact mitigation	LS	-	-	100,000
Total in Taka Sixteen lac only					1,600,000

Table 14: Environmental Monitoring Costs during Construction of extension work of Sheola 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	--	--	50,000
Campsite waste disposal facilities	During Construction	Avoid disease	LS	-	50,000
Air Pollution	During Construction	Measurement of SPM, PM ₁₀ , PM _{2.5} , NO _x , SO ₂ , CO. (2 locations)	30,000	4	120,000
Water Pollution	During Construction	Measurement of pH, EC, Turbidity, DO, Coli form, BOD, NH ₄ 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
Grand Total	In Word Tk. Eleven Lac Thirty Thousand Only				1,130,000

Table 15: Environmental Monitoring Costs during O&M Phase of extension work of Sheola Land Port

Component	Stage	Item	Unit Cost (BDT)	Quantity (Yearly)	Total Costs (BDT)
Air Pollution	During operation	Measurement of PM ₁₀ , PM _{2.5} , NO _x , SO ₂ , CO.	30,000	4	120,000
Water Pollution	During operation	Measurement of pH, EC, Turbidity, DO, Coli form, BOD, NH ₄ 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	-	50,000
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
Grand Total	In Word Tk. Ten Lac Thirty Thousand Only				1,030,000

75. Estimated total environmental management budget is 3,760,000 BDT (Thirty-Seven Lacs Sixty Thousand Taka Only).

9 CONCLUSION AND RECOMMENDATION

76. 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 3.78 acres of new land.

77. The 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. Environmental and Social Management Plan covers all possible mitigation and compensation measures including budgeting and monitoring. The ESMP should be implemented timely and properly by concerned department.

78. Development of a land port can make a significant contribution to the economic development. At the same time, it may also create adverse impacts on the surrounding environment. From the study, it is revealed that most of the potential impacts can be avoided or reduced by adopting and following mitigation measures properly.