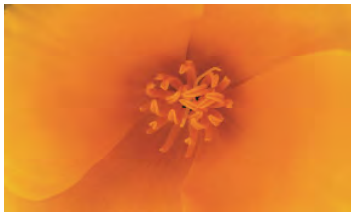
Resettlement Framework

Project Number: 50253-001
October 2017

BAN: Reliance Bangladesh LNG Terminal Limited


Resettlement Framework for the Proposed LNG Terminal Project, *Bangladesh*

Reliance Power Limited

Final Report
October 2017

www.erm.com

The Business of Sustainability

ERM

CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ANNEXES

Abbreviations

ADB	Asian Development Bank
ADC	Additional Deputy Commissioner
AP	Affected Person
ARIPO	The Acquisition and Requisition of Immovable Property Ordinance, 1982
CCL	Cash Compensation under Law
CTMS	Custody Transfer Metering system
DC	Deputy Commissioner
DP	Displaced Person
ESIA	Environmental Social Impact Assessment
FSRU	Floating Storage and Regasification Unit
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
GTCL	Gas Transmission Company Limited
LNG	Liquid Natural Gas
NOC	No Objection Certificate
RF	Resettlement Framework
RP	Resettlement Plan
RLNG	Re-gasified Liquid Natural Gas
SPS	Safeguard Policy Statement
UNO	Upazila Nirbhahi Officer

1 PROJECT DESCRIPTION

1.1 INTRODUCTION

1. Reliance Power Limited through their subsidiary in Bangladesh, Reliance Bangladesh LNG Terminal Limited, (hereinafter also referred to as RBLTL or the Project Proponent) plans to establish a LNG storage and re-gasification facility of up to 5.0 million tonnes per annum (MMTPA) capacity with peak send out gas of 750 million standard cubic feet per day (MMSCFD). There will be LNG storage of 137,000 m^3 to 216,000 m^3 in Floating Storage and Regasification Unit (FSRU) located offshore *Kutubdia* Island with connecting pipeline up to metering station at *Napura*, *Banskhali* in *Cox's Bazar* region of Bangladesh. Reliance Power Limited through another subsidiary in Bangladesh, Reliance Bangladesh LNG and Power Limited (RBLPL), has strategic plans to establish itself as an Independent Power Producer (IPP). RBLPL proposes to develop a combined cycle gas based power plant of capacity 750 MW (Natural Gas/regasified Liquid Natural Gas i.e. RLNG based) in Bangladesh to meet the existing power shortage and the demand-growth in future years.

1.2 PROJECT DESCRIPTION

2. The LNG Terminal is proposed to be located offshore *Kutubdia* Island *Upazila* in Cox's Bazar District of Bangladesh. The *Kutubdia* Island is isolated from main shore of Bangladesh. There is no direct road access to this island. The *Kutubdia* Channel has to be crossed to reach the island. The proposed facility is being planned as offshore Floating Storage and Regasification Unit (FSRU) with 2 km subsea pipeline (from FSRU to *Kutubdia* Island) connecting to spur pipeline (of ~16 km) from *Kutubdia* Island up to custody transfer metering station (CTMS) proposed to be located at *Napura, Banshkhali* to connect gas into the GTCL's main gas grid pipeline of *Moheshkhalli – Anwara* Section.

3. The LNG Terminal will include the following (refer to Figure 1.5& Figure 1.6):
   Marine component off *Kutubdia* Island comprising of -
   - Twin (double berth) jetty with topside to be located offshore 1.5 km to the west of *Kutubdia* Island with 0.5 MW gas based power generation;
   - Floating Storage and Regasification (FSRU) of storage capacity of 137,000 m^3 to 216,000 m^3 with 10 MW of onboard gas based power generation;
   - Re-gasification onboard FSRU with 750 MMSCFD peak send out gas (RLNG) capacity;
   - High pressure 30 inches diameter subsea re-gasified LNG (RLNG) pipeline of ~2 km length;

Onshore facilities

- Subsurface and subsea spur gas pipeline of ~16 km length (30 inches diameter) connecting from *Kutubdia* Island to custody transfer metering station (CTMS) through Valve Station no. 2 located at *Napura, Banskhali* from where it will be connected into the GTCL's national gas grid pipeline of *Moheshkhalli – Anwara* Section. The pipeline length of ~16 km also includes 2.7 km of subsea pipeline length passing through *Kutubdia* Channel. The CTMS at *Napura* will also have a small 0.5 MW (500 kWh) of gas based power generating unit and pipeline pigging facility.

4. The LNG terminal with offshore FSRU will be connected up to *Kutubdia* Island by ~2 km subsea pipeline and ~16 km spur gas pipeline from *Kutubdia* Island to CTMS at *Napura, Banskhali, for* transmitting RLNG into GTCL's national grid gas pipeline - *Moheshkhalli – Anwara* Section. The subsea/subsurface pipeline will be laid using horizontal directional drilling (HDD) methodology.

1.3 SCOPE OF LAND ACQUISITION IMPACTS

1.3.1 Reconnaissance Surveys to Identify Feasible Alignment

5. A reconnaissance survey to identify the most feasible alignment connecting the *Kutubdia* Island to CTMS proposed to be located at *Napura* was undertaken. The reconnaissance surveys identified four alternative alignments as shown in ***Figure 1.1***. Alignment B was identified as the most feasible alignment based on technical, social and environmental considerations. The identified Alignment B passes through minimal agricultural lands and will **not** result in physical displacement impacts along the entire length. The output of the reconnaissance survey will form direct input for the detailed surveys and design of the pipeline to be carried out in 2018. ***Figure 1.2*** presents the nature of land uses along different sections of the alignment B. The land uses along the selected alignment in different sections are homogenous with little or no built up areas or structures along the entire alignment. While the alignment passes through barren lands, salt pans and few fish ponds and agricultural fields in the stretch within *Kutubdia* Island, the land use is predominantly agriculture in the stretch in the mainland up to the *Napura* valve station.

Figure 1.1 Reconnaissance Survey based Four Alternative Pipeline Routes

Source: Reliance Power

Figure 1.2 Land uses Along the Selected Alignment B

1.3.2 Preliminary Estimation of Land Acquisition & Resettlement Impacts

6. Sub-component wise land acquisition and requisition requirements based on the feasible options for the project components for the LNG terminal are discussed below:
   a) **LNG terminal and the regasification facility.** LNG terminal and regasification facility (onboad FSRU) being proposed in the offshore region off *Kutubdia* Island, it does not require land acquisition.
   b) **Onshore Spur Gas Pipeline**: The onus of land acquisition for laying onshore (30 inches diameter) high pressure spur pipeline of ~16 km length (including 2.7 km subsea pipeline passing through *Kutubdia* Channel) from *Kutubdia* Island to CTMS at *Napura* is bestowed with Petrobangla[1], Government of Bangladesh. The pipeline will be buried and laid through HDD methodology. For laying of the gas pipeline 26.361 acres of land will be acquired on permanent basis and 49.343 acres of land will be taken up as temporary land requisition during the construction period for movement of construction materials. The acquired land will be handed over to RBLTL by Petrobangla for 15 years for erection and subsequent operations and maintenance for supply of RLNG into the national gas grid. The width of the pipeline corridor for permanent land acquisition will be 8 m and additional ~15 m (as land requisition) along the pipeline will be required during construction period. This will cause temporary disruption to the land users only during the construction period. The gas pipeline will involve the following land acquisition and requisition impacts
      i) Permanent land acquisition of 8m along the pipeline corridor: While the land ownership will be transferred to Petrobangla, the entire 8 m corridor will be available to the land owner for continued use of the land with some restrictions, enabling the land owner to continue their pre-project use of the land for agriculture, salt pan or fish pond purposes. The impacts on crop productivity or livelihood losses for the land owner are expected during the construction period that is likely to last for a maximum of 12 months. ADB's due diligence and site visits included visits to gas pipelines in the vicinity implemented by Petrobangla and discussions with the land owners along the pipelines recently constructed. Based on the site visits and discussions, it is confirmed that the private lands were available for continued use once the construction of the pipeline is completed (***Figure 1.3***) and no permanent land losses are expected to the land owners due to the laying of the proposed gas pipelines. To ensure safety of the pipelines and for maintenance purposes, RBLTL will carry out consultations with the land owners informing them on restrictions to erect structures or plant large trees apart from allowing access to enable maintenance activities whenever required. The

[1] GTCL, a subsidiary of Petrobangla, has the experience of implementing several gas transmission pipeline projects funded by ADB in compliance with its social safeguard policies (SPS, 2009). GTCL in compliance with ADB SPS, 2009 requirements, shall be advised to follow the guidelines as outlined in this RF.

grievance mechanism will include access to the affected persons to redress any issues related to continued use of the lands acquired during the operation phase.

ii) **Requisition of lands for an additional ~15 m** along the pipeline will be required during construction period. This requisition will be purely for the construction period and is expected to be for one year, after which the lands will be restored and reinstated to the best achievable original conditions and returned to the land owners.

Figure 1.3 Continued Agriculture Use After Laying of GTCL's Pipeline at Napura

Figure 1.4 Pillars shown of Already Erected Pipeline of GTCL (on 8 m Permanently Acquired Corridor)

c) **Custody Transfer Metering Station (CTMS):** Petrobangla will also acquire 3.965 acres of land required for setting up of CTMS and will hand over the land to RBLTL for 15 years. This will be a permanent land loss to the affected persons, who currently use the lands for agriculture purposes. The 3.965 acres land for CTMS involving agricultural from 23 daag (land parcels/families), and will not result in physical displacement of any of the households. There are no permanent structures, residential or commercial, located within this plot that would require to be displaced. RBLTL team has had preliminary discussions with these land owners who have confirmed their willingness for land acquisition provided adequate and fair compensation is provided.

7. Preliminary survey of pipeline alignment indicates that there are about 2,877 land owners whose land will be acquired and required for the spur pipeline and CTMS, based on the government land records (not updated for more than 30 years). These 2,877 land owners represent the 625 land parcels that will be affected. Summary of land acquisition and requisition for spur pipeline and CTMS is provided in ***Table 1.1*** and detailed description included in ***Section 3.4*** and ***Annex 2***. Permanent impacts are likely to occur only for the CTMS facility. The 15m corridor that will be taken up through requisition will be returned to the land owners after the completion of the construction period of a maximum of 12 months. Similarly, the 8 m corridor that will be acquired will be made available to the landowners after the completion of the construction of the pipeline and is not expected to be more than 12 months. While the land records indicate that a total of 23 land parcels and families occupying the 3.965 acres proposed for the CTMS facility, the consultations with the communities by the field teams of RBLTL indicate that the land parcels belong to 23 families. The number of affected persons for CTMS land is not likely to exceed 200, justifying the Category B for Involuntary Resettlement for the Project. Further, the due diligence confirms that there is no physical displacement expected in the Project.

Table 1.1 Summary of Land Requisition & Acquisition for Pipeline Route & CTMS

SN	Mouza Name	Land Requisition Acres		Permanent Land Acquisition Acres	Estimated number of land parcels impacted	Estimated number of Land Owners
		Left Side of corridor (7.5 m wide)	Right Side of corridor (7.5 m wide)			
A	**Pipeline Route**					
1	Dakshin Dhurung	4.051	3.995	4.317	77	487
2	Utar Dhurung	5.488	5.610	5.914	234	815
3	Char Dhurung	4.005	3.952	4.244	49	465
4	Kudukhanlli	5.563	5.559	5.941	95	378
5	Sakherkhil	5.570	5.549	5.945	147	545
B	**Custody Transfer Metering Station CTMS**					
6	Sakherkhil	0.000	0.000	3.965	23	187
		24.676	24.666			
Total		**49.343**		**30.326**	**625**	**2,877**

Source: Reliance Power; Note: The detailed chain-age wise description of land involved Daag/Khatia nos. wise is presented in ***Annex 2*** of this document.

8. The above ***Table 1.1*** represents owners of the parcels of land involved for permanent land acquisition (of 30.326 acres) and temporary land requisition (of 49.343 acres). As at this stage, it is difficult to ascertain exact number of land owners representing permanent land acquisition and temporary land requisition. However, upon proportionally dividing, the likely land owners for permanent land acquisition will be 1,095 while for temporary land requisition these will be 1,782. Further, it is important to note that the land owners mentioned above represents number of members of family who hold joint ownership of land involved. Considering the 625 land parcels as families, the land procurement will impact 387 parcels or families for requisition purposes and 238 families for the permanent acquisition. An attempt to assess the land holding sizes in the project area was carried out to understand the potential number of families that could be impacted. ***Table 1.3*** provides the land holding sizes in the project area. The average land holding size is smaller in *Kutubdia* Island with an average of 0.30 acre, while the land holding sizes in the mainland are higher with an average land holding of about 0.75 acre.

Table 1.2 Land Holding Sizes along the Proposed Pipeline Corridor

Section	Mouza Name	Chainage, m	Number of daag (land parcels)	Area of land parcels (total)	Average land holding size
1	Dakshin Dhurung	0-3000	77	20.93	0.27
2	Utar Dhurung	3,000-6500	234	50.56	0.22
3	Char Dhurung	6,500-8500	49	18.39	0.38
4	Kudukhanlli	11,000-14000	95	73.41	0.77
5	Sakherkhil	14,000-17000	147	111	0.76
	Total		**625**		

Source: Land Records along the selected Alignment B

9. Land use classification of land parcels involved in permanent land acquisition and temporary land requisition for the Project related gas pipeline laying is described in ***Table 1.2***. As per the Table, out 30.326 acres of the permanent land involved, there will be 30.5% of sand beach land, 49.4% agriculture land, 18.1% salt pan land, 1.1% plantation land and 0.9% pond land.

Table 1.3 Land use Classification of the Land Acquisition & Requisition

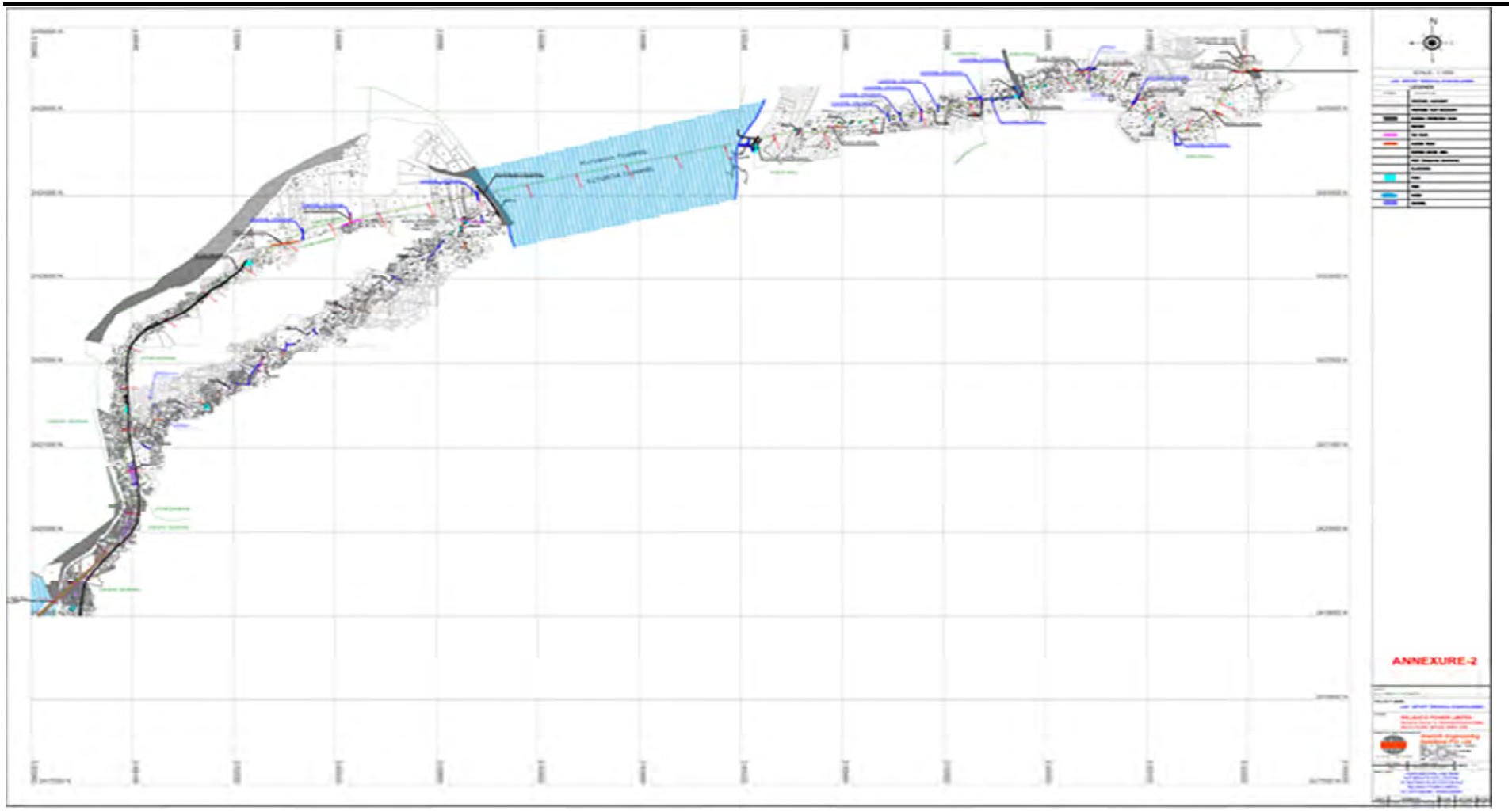
Land Category	Dakshin Dhurung		Uttar Dhurung & Char Dhurung		Khudukkhali		Shekharkhil Mouza ChotoChanua		Napura	LA Land use Acres (%)	LR Land use Acres (%)	Total LA+LR Land use Acres (%)
	LA Acre	LR Acre	LA Acre	LR Acre	LA Acre	LR Acre	LA Acre	LR Acre	LA Acre			
Sand Beach	4.05	7.553	4.579	8.595	0.609	1.141	0	0		9.238 (30.5%)	17.289 (35.0%)	26.527 (33.3%)
Agriculture	0.01	0.023	0	0.038	5.221	9.773	5.784	10.817	3.965	14.98 (49.4%)	20.651 (41.9%)	35.631 (44.7%)
Salt Pan	0.237	0.426	5.251	9.847	0	0	0	0		5.488 (18.1%)	10.273 (20.8%)	15.761 (19.8%)
Plantation	0.02	0.044	0.328	0.576	0	0	0	0		0.348 (1.1%)	0.62 (1.3%)	0.968 (1.2%)

Land Category	Dakshin Dhurung		Uttar Dhurung & Char Dhurung		Khudukkhali		Shekharkhil Mouza ChotoChanua		Napura	LA Land use Acres	LR Land use Acres	Total LA+LR Land use
Pond	0	0	0	0	0.111	0.208	0.161	0.302		0.272 (0.9%)	0.51 (1.0%)	0.782 (1.0%)
Total	**4.317**	**8.046**	**10.158**	**19.056**	**5.941**	**11.122**	**5.945**	**11.119**	**3.965**	**30.326**	**49.343**	**79.669**
Land Acquisition = 4.317+10.158+5.941+5.945+3.965 = 30.326 Acres												
Land Requisition = 8.046+11.098+11.122+11.119 = 49.343 Acres												

Source: Reliance Power; LA = Land Acquisition; LR = Land Requisition

Figure 1.5 Google Earth Image showing location of Project Site (offshore LNG Terminal & Connecting Onshore Subsurface & Subsea Pipeline Route)

Figure 1.6 Proposed Spur Gas Pipeline Route



10. These physical infrastructure works, both for the ~16 km onshore spur gas pipeline and CTMS at *Napura* would require technically suitable lands parcels that will be both government and private land. The requisition and acquisition of land for the onshore spur pipeline and CTMS will be done by Petrobangla. The government land may be required to be transferred on lease basis or issuance of 'no objection certificate' (NOC) from the concern government department based on the application for land by Petrobangla.

11. Fishing is a major livelihood source off *Kutubdia* Island with communities practicing both deep sea fishing as well as estuarine and near shore fishing. The modelling of the cold water and machine cooling water discharge confirms that there is no appreciable increase in temperature in the worst-case scenarios within 100m of the mixing zone from the discharge location and therefore livelihood impacts on fishing communities are unlikely. Construction related impacts on livelihoods of fishing communities carrying out on-shore fishing and deep sea fishing activities along the 2km subsea pipeline is not expected as the pipeline will be laid through horizontal directional drilling underneath the seabed, without the need for (i) exclusion of fishing activities for the period of construction and operation; (ii) restriction of movement of fishing vessels, and (iii) access restrictions to the fishing grounds or traditional fishing routes. However, detailed livelihood impacts will be assessed including any restrictions on fishing and required measures to be developed in the Resettlement Plan.

12. Potential social impacts assessed for laying of the spur gas pipeline and CTMS facility is loss of land, loss of standing crops, loss of trees and temporary loss of income during the construction of the pipeline. The potential social impacts assessed due to the laying of the spur gas pipeline and CTMS is described in ***Table 1.3***. It is to be noted that the proposed option for the pipeline route has been identified (after a detailed reconnaissance study on pipeline route alternatives) in such a way that no physical displacement or damage to mangroves or structural loss is encountered throughout the route, thus to minimize potential environmental and social impacts. Further, the permanent land acquisition also involves pond land of 0.272 acres (0.9%) mainly meant for aquaculture in the area. RBLTL has planned to avoid pipeline routing under the aquaculture ponds, however, where unavoidable, impacts will be minimized by laying pipeline through horizontal directional drilling method to avoid any direct impact on aquaculture activities in the area.

Table 1.4 Potential Social Impacts Assessed for Spur Gas Pipeline and CTMS Facility

Types of Losses	Potential Impacts
Loss of private land	Permanent loss of private land (primarily agricultural land) for CTMS; land for the metering station will be acquired.
	For spur gas pipeline the corridor of 8 m will be acquired by Petrobangla and made available to the landowners with certain restrictions for continued usage after construction of the pipeline.
Loss of standing crops	The land users will be intimated in advance so that standing crops may be harvested. However, there may be instances of loss of standing crops due to laying of the gas pipeline.
Loss of trees	Felling of trees along the pipeline alignment will be required
Loss of livelihood	Temporary disruption of income of the land owners, users and workers during the construction of the pipeline, maximum for 12 months
Pond water contamination	Inadvertent entry of drilling fluid due to horizontal directional drilling may contaminate pond water. Further, there is potential erosion of soil into the ponds from surrounding area of pipeline laying. To minimize impacts proper planning and depths have to be taken into consideration. Proper supervision and control measures including use of pre-coated pipeline will be in place to ensure no soil erosion from surrounding area takes place due to pipeline laying. In case of inadvertent contamination of pond water due to pipeline laying, necessary clean-up of the pond water and losses caused will be compensated.

1.4 OBJECTIVE OF RESETTLEMENT FRAMEWORK

13. The objective of the Resettlement Framework (RF)(1) is to appropriately guide preparation of resettlement plan which will commensurate with identification of impacts and will address mitigation measures to avoid, minimize and where unavoidable compensate for adverse socioeconomic impacts that may occur due to the implementation of projects that involve the involuntary acquisition of land and subsequent resettlement of affected families. The RF aims to avoid involuntary acquisition of land wherever possible and in cases where it is unavoidable, the RF requires that a robust resettlement plan (RP) is effectively designed and implemented by Petrobangla for onshore gas pipeline and CTMS to minimize related social impacts.

14. The estimates of potential land acquisition impacts are based on the reconnaissance surveys and there are no draft designs already available for the pipeline or CTMS. The design of the pipeline and the exact footprints of the pipeline are yet to be finalized by RBLTL and will be taken up only upon signing of the Terminal User Agreement (TUA) with the Government of Bangladesh. The draft Terminal User Agreement has the following provision for land procurement - *The Customer (Petrobangla) shall provide all easements and rights for laying, testing, commissioning,*

(1) Resettlement Framework has been prepared as at this stage Resettlement Plan (RP) cannot be prepared as the detailed verification of land owners as part of the land acquisition process is yet to be taken up by Petrobangla. Once land owners are identified, social survey and social impact assessment of the affected persons will be done by Petrobangla.

operation and maintenance of Delivery Pipeline and Land Fall Point Facility, including temporary construction easement on land or premises owned private entity or Government Authority till the Scheduled Expiry Date.
RBLTL will be able to carry out the finalization of the pipeline designs only after Petrobangla initiates the land procurement process and the exact alignment is known on ground. Petrobangla will formally initiate the land procurement process only after the TUA is signed. The signing of the TUA is expected to be around the time of loan signing which is usually after the lenders to the project, including ADB, have completed their approval process. Therefore, preparation of a resettlement plan by RBLTL prior to ADB Board approval is not possible, triggering the need for the preparation of a Resettlement Framework in lieu of safeguard plans for the subproject.

15. This resettlement framework describes the policy principles and procedures to be adopted to comply with ADB safeguard requirements on involuntary resettlement. Petrobangla will prepare a resettlement plan (RP) based on the final alignment which confirms in accordance with this framework, even if the final designs and due diligence confirm that the impacts are not significant.

16. The Resettlement Framework considers the guidelines as stated in the Environmental and Social Management Framework (ESMF) undertaken for Investment Promotion and Financing Facility (IPFF) Project under Bangladesh Bank – this is an initiative of the GoB with the support from World Bank (WB). The ESMF is prepared to comply with the national land acquisition requirements of Bangladesh on "The Acquisition and Requisition of Immovable Property Ordinance (ARIPO), 1982" and its subsequent amendments in 1993 and 1994 apart from compliance to the World Bank Operational Policies on environment and social safeguards and is consistent with the requirements of ADB's Safeguard Policy Statement, 2009. The ESMF is included in ***Annex 1*** [https://www.bb.org.bd/aboutus/dept/ipff/july2011esmf.pdf].

17. The Resettlement Framework (RF) prepared for land acquisition for onshore gas spur pipeline of ~16 km length and CTMS at *Napura, Banskhali* outlines the policies to be adopted to address the gaps identified between ARIPO and ADB SPS, 2009. The RF will be for developing and implementing the RP by the land acquisition agency i.e. Petrobangla.

2.1 NATIONAL LAWS & REGULATIONS OF BANGLADESH

18. The basic principles for the compensation of property in Bangladesh are founded in Articles 42 and 47 of the Constitution. The current legislation governing land acquisition in Bangladesh is the ARIPO, 1982 and subsequent amendments during 1993-1994. The Ordinance 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 Deputy Commissioner (DC) determines the market price of assets based on the approved government procedure.

19. The first step in acquiring land is filing an application to the Ministry of Land (MOL) through the concerned project ministry (i.e. Ministry of Energy) requesting requisition and transfer of the land or any structure fixed or movable asset (shallow pump etc.) located on the identified pieces of land for the pipeline route. A detailed statement specifying whether the land mentioned in the application is needed for public or private purpose, the area of the land, sketch-map and purpose for which it could be used should be submitted as well. The MOL examines the application and sends it to the concerned DC for necessary action. The DC then authorizes the Additional Deputy Commissioner (ADC) related to land to prepare and execute a plan of action for requisition. The DC in turn issues a public notice for land requisition and at that time aims to settle matters relating to payment of compensation to the owner(s) of the property or other person(s) entitled to compensation, as well as attempt to settle any other

related issues. Any contravention or attempts to contravene an order, or obstruction to the enforcement of an order, is punishable with imprisonment for a term that may extend to three months, or with a fine which may extend to three thousand taka, or with both.

20. The Deputy Commissioners (DCs) in all cases determine "market value" of acquired assets on the date of notice of acquisition (notice under Section 3 of the Ordinance). The DCs then add premium of the assessed value for cash compensation under law (CCL) of all acquired assets due to compulsory acquisition. The CCL paid for land is generally less than the "market value" as owners customarily report lower values during registration to avoid and/or pay fewer taxes. If land acquired has standing crops cultivated by tenant / sharecroppers under a legally constituted written agreement, the law requires that part of the compensation money be paid in cash to the tenants as per the agreement. Places of worship, graveyard and cremation grounds are not to be acquired for any purpose. The law requires that the salvaged materials upon payment of compensation will be auctioned out by the Government.

Note: It is to be noted that recently Cabinet of Government of People's Republic of Bangladesh (Government of Bangladesh) has introduced a draft of Immovable Asset Acquisition and Requisition Bill, 2017. Any additional requirement, as communicated by the regulatory authority upon conversion of the bill into an act, will be enforced by Petrobangla for the applicable provisions for the land acquisition for the Project i.e. pipeline route and CTMS.

2.2 ADB SAFEGUARD POLICY STATEMENT, 2009

21. The objectives of ADB's SPS with regard to involuntary resettlement are: (i) to avoid involuntary resettlement wherever possible; (ii) to minimize involuntary resettlement by exploring project and design alternatives; (iii) to enhance, or at least restore, the livelihoods of all displaced persons in real terms relative to pre-project levels; and (iv) to improve the standards of living of the displaced poor and other vulnerable groups. The SPS covers physical displacement (relocation, loss of residential land, or loss of shelter) and economic displacement (loss of land, assets, access to assets, income sources, or means of livelihoods) as a result of (i) involuntary acquisition of land, or (ii) involuntary restrictions on land use or on access to legally designated parks and protected areas. It covers displaced persons whether such losses and involuntary restrictions are full or partial, permanent or temporary.

22. For any ADB operation requiring involuntary resettlement, resettlement planning is an integral part of project design, from the early stages of the project cycle, taking into account the following basic principles as per SPS:

    a. Involuntary resettlement (IR) will be avoided or minimized as much as possible and where IR is unavoidable, displaced persons (DPs) will be

compensated full replacement close [1]for their losses and provided with needed assistance;

b. Improve, or at least restore, the livelihoods of all displaced persons through (i) land-based resettlement strategies when affected livelihoods are land based where possible or cash compensation at replacement value for land when the loss of land does not undermine livelihoods, (ii) prompt replacement of assets with access to assets of equal or higher value, (iii) prompt compensation at full replacement cost for assets that cannot be restored, and (iv) additional revenues and services through benefit sharing schemes where possible.
c. Improve the standards of living of the displaced poor and other vulnerable groups, including women, to at least national minimum standards. In rural areas provide them with legal and affordable access to land and resources, and in urban areas provide them with appropriate income sources and legal and affordable access to adequate housing.
d. Carry out meaningful consultations with affected persons, host communities, and concerned nongovernment organizations. Inform all displaced persons of their entitlements and resettlement options. Develop procedures in a transparent, consistent, and equitable manner if land acquisition is through negotiated settlement to ensure that those people who enter into negotiated settlements will maintain the same or better income and livelihood status. Establish a grievance redress mechanism to receive and facilitate resolution of the affected persons' concerns.
e. Ensure that displaced persons without titles to land or any recognizable legal rights to land are eligible for resettlement assistance and compensation for loss of non-land assets.
f. Prepare and make disclosure of resettlement framework elaborating on displaced persons' entitlements, the income and livelihood restoration strategy, institutional arrangements, monitoring and reporting framework, budget, and time-bound implementation schedule as specified in the gap Matrix provided in ***Table 2.1.***
g. Conceive and execute involuntary resettlement as part of a development project or program. Include the full costs of resettlement in the presentation of project's costs and benefits.
h. Pay compensation and provide other resettlement entitlements before physical or economic displacement.
i. Monitor and assess resettlement outcomes, their impacts on the standards of living of displaced persons, as per the monitoring plan provided in this framework. The monitoring plan is expected to be implemented by Petrobangla. Disclose monitoring reports is essential.

2.3 GAPS BETWEEN ARIPO AND ADB SPS, 2009

23. The ARIPO, 1982 and its subsequent amendments in 1993 and 1994 are followed for acquisition and requisition of properties required for the development project. The provisions of this law do not cover the requirements of the ADB involuntary resettlement policy. The table below identifies the key gaps between ARIPO and ADB SPS, 2009. The measures as suggested in this resettlement framework, bridging gaps between national laws and ADB's SPS (refer to ***Table 2.1)***, are to be implemented by Petrobangla during the process of land requisition and acquisition for onshore gas pipeline and CTMS.

2.4 ESMF FOR IPFF ADOPTED BY PETROBANGLA

24. The ESMF outlines safeguard measures for projects undertaken:

- Every sub-project will be screened by the sub-borrower for social impacts – that need, if any, for land acquisition and involuntary resettlement (permanent or temporary) and the impacts on the population to be affected
- A Resettlement Action Plan (RAP) is required based on a social assessment (SA) The level of details and comprehensiveness of the plan will commensurate to the significance of impact.
- Safeguard documents will be subject to consultation and disclosure in an accessible place, in a timely manner, in a form and language understandable to key stakeholders, prior to the finalization of the documents. Particular attention will be given to ensure project-affected persons have adequate time and ready access to draft documents before consultation takes place.
- Consultation and communication is an iterative process that should be followed throughout the SIA and RAP preparation, implementation and monitoring and evaluation phases.
- Information to be disclosed will include, at a minimum: sub-project design, impacts, entitlement matrix, proposed mitigation and management measures, grievance redress procedures and implementation arrangements.
- All safeguard documents will be disclosed at a public place accessible to affected groups and other stakeholders prior to consultation to establish the basis for meaningful consultation. Disclosure should be done in a culturally appropriate form and language.
- A grievance redress mechanism for the project is necessary for addressing legitimate concerns of affected individuals and groups who may consider themselves deprived of appropriate treatment under the Project.

2.5 GAP ANALYSIS BETWEEN ADB SPS, 2009 AND ESMF UNDER IPFF

25. The above mentioned ESMF undertaken for IPFF will be the screening criteria for this Project. An assessment of the ADB safeguard requirements for involuntary resettlement as outlined in Safeguard Policy Statement, 2009 and the ESMF under IPFF is provided in the *Error! Reference source not found.*.

Table 2.1 Gaps Analysis: ADB SPS, 2009; GoB, ARIPO & ESMF under IPFF

ADB SPS, 2009 (IR Principles)	GoB, ARIPO	Measures to Bridge Gaps between ADB SPS & GoB ARIPO	ESMF under IPFF	Measures to Bridge Gaps between ADB SPS & ESMF
Principle 1: Screen the project early on to identify past, present, and future involuntary resettlement impacts and risks. Determine the scope of resettlement planning through a survey and/or census of displaced persons, including a gender analysis, specifically related to resettlement impacts and risks.	ARIPO does not state about early project screening to identify past, present and future involuntary resettlement impacts	The project will be assessed during the planning and designing stage for involuntary resettlement and land acquisition and accordingly categorised.	The ESMF covers the screening process very vividly with a screening methodology and social safeguards screening (*Section of 2.4, 2.5 & 2.7 of the ESMF*).	None
Principle 2: Carry out meaningful consultations with affected persons, host communities, and concerned nongovernment organizations. Inform all displaced persons of their entitlements and resettlement options. Ensure their participation in planning, implementation, and monitoring and evaluation of resettlement programs. Pay particular attention to the needs of vulnerable groups, especially those below the poverty line, the landless, the elderly, women and children, and Indigenous Peoples, and those without legal title to land, and ensure their participation in consultations. Establish a grievance redress mechanism to receive and facilitate resolution of the affected persons' concerns. Support the social and cultural institutions of displaced persons and their host population. Where involuntary resettlement impacts and risks are highly complex and sensitive, compensation and resettlement decisions should be preceded by a social preparation phase.	ARIPO does not emphasize on consultation. In terms of disclosure – the Deputy Commissioner publishes a notice at convenient places or near the property on issuance of notice under Section 3 of ARIPO stating that the property is proposed to be acquired.	Extensive consultations have been carried out during design and the ESIA stage; consultations with APs and other stakeholders must be done during the RP preparation and its implementations. Resettlement Framework (RF) along with the Entitlement Matrix (EM) must be disclosed by the Petrobangla before initiating land requisition and acquisition for onshore gas pipeline and CTMS.	The ESMF states that *the Sub-Borrowers are responsible for the quality and accuracy of the information in the EA document, as well as public consultation and disclosure of the documents. The Safeguard documents will be subject to consultation* (*Section 2.9 of the ESMF*). It mentions that *the consultation & communication should be followed throughout the SIA and RAP preparation, implementation and monitoring and evaluation phases.* The section also mentions about the GRM and that *it is necessary for addressing legitimate concerns of affected persons or communities.*	None

ADB SPS, 2009 (IR Principles)	GoB, ARIPO	Measures to Bridge Gaps between ADB SPS & GoB ARIPO	ESMF under IPFF	Measures to Bridge Gaps between ADB SPS & ESMF
Principle 3: Improve, or at least restore, the livelihoods of all displaced persons through (i) land-based resettlement strategies when affected livelihoods are land based where possible or cash compensation at replacement value for land when the loss of land does not undermine livelihoods, (ii) prompt replacement of assets with access to assets of equal or higher value, (iii) prompt compensation at full replacement cost for assets that cannot be restored, and (iv) additional revenues and services through benefit sharing schemes where possible.	The law does not provide any provision for restoration of livelihood of the affected persons including the non-titleholders	The project will assess the income loss of both the titleholders and non-titleholders affected by the project and shall make an effort to compensate the income losses. It needs mentioning that major income loss is not anticipated under this project. There will be temporary income loss during the laying of the gas pipeline.	The ESMF document in its Social Compliance Matrix (**Table 4.3**) in the Institutional Responsibility section describes that *the project sponsor shall prepare a Resettlement Action Plan (RAP) as per Operational Policy of World Bank 4.12 (OP 4.12).*	None
Principle 4: Provide physically and economically displaced persons with needed assistance, including the following: (i) if there is relocation, secured tenure to relocation land, better housing at resettlement sites with comparable access to employment and production opportunities, integration of resettled persons economically and socially into their host communities, and extension of project benefits to host communities; (ii) transitional support and development assistance, such as land development, credit facilities, training, or employment opportunities; and (iii) civic infrastructure and community services, as required.	No provision for relocation assistance	There will be no incidence of physical and economical displacement due to the project implementation	The OP 4.12 outlines that relocation assistance is necessary, and the Social Compliance Matrix mentions that *the project sponsor shall prepare a RAP in compliance with OP 4.12.*	None
Principle 5: Improve the standards of living of the displaced poor and other vulnerable groups, including women, to at least national minimum standards. In rural areas provide them with legal and affordable access to land and resources, and in urban areas provide them with appropriate income sources and legal and affordable access to adequate housing.	ARIPO does not have any special provision or assistance for vulnerable groups	Special assistance measures for vulnerable groups will be provided	The Social Compliance Matrix describes that *the project sponsor will design mitigation measures and RAP in line with OP 4.12.*	None

ADB SPS, 2009 (IR Principles)	GoB, ARIPO	Measures to Bridge Gaps between ADB SPS & GoB ARIPO	ESMF under IPFF	Measures to Bridge Gaps between ADB SPS & ESMF
Principle 6: Develop procedures in a transparent, consistent, and equitable manner if land acquisition is through negotiated settlement to ensure that those people who enter into negotiated settlements will maintain the same or better income and livelihood status.	ARIPO has not spelt out any provisions for carrying out land acquisition through negotiated settlement	The RF has clearly stated about the provisions of land acquisition through negotiated settlement and that the process shall be certified by a Third party to ascertain that no coercion has been applied to the land sellers.	The ESMF does not have explicit provisions for negotiated settlement for land compensation. However, as the ESMF complies with OP 4.12 which outlines negotiated settlement for land compensation, it is expected that the Petrobangla will comply with the requirement under Principle 6.	The Resettlement Plan to comply with the procedures on negotiated land acquisition consistent with requirements of SPS para 25.
Principle 7: Ensure that displaced persons without titles to land or any recognizable legal rights to land are eligible for resettlement assistance and compensation for loss of non-land assets.	Eligibility of non-title holders are not recognized for compensation under the law	For loss of income and crops due to the project implementation non-titleholders (users, workers) will be assessed and compensated	The Social Compliance Matrix mentions that *the project sponsor will design mitigation measures and RAP in line with OP 4.12.* The operational policy also includes non-titleholders as affected person.	None
Principle 8: Prepare a resettlement plan elaborating on displaced persons' entitlements, the income and livelihood restoration strategy, institutional arrangements, monitoring and reporting framework, budget, and time-bound implementation schedule.	No provisions for preparation of resettlement plan under the law. Only the land owners are compensated for the loss.	A Resettlement Plan (RP) will be prepared by the Petrobangla, who will undertake land acquisition for RBLTL in alignment with the guiding policies as outlined in this Resettlement Framework (RF)	The ESMF in Section 2.9 states that *the Sub-Borrower is responsible for preparation of comparable documents like land acquisition and resettlement plans required for national regulatory compliance.*	None
Principle 9: Disclose a draft resettlement plan, including documentation of the consultation process in a timely manner, before project appraisal, in an accessible place and a form and language(s) understandable to affected persons and other stakeholders. Disclose the final resettlement plan and its updates to affected persons and other stakeholders.	ARIPO does not speak about resettlement plan and its disclosure.	The ESMF in Section 2.9 covers ….*Disclosure should be done in a culturally appropriate form and language. At minimum, the Executive Summary of the RAP and TPDP (as applicable) should be available in Bangla, in locally accessible locations to project-affected peoples.*	The ESMF requires disclosure of the RP in Section 2.9. Further, the RP outline in the ESMF requires preparation of a disclosure plan based on the project requirements, and will include the disclosure of the draft and final resettlement plans to the affected persons and interested stakeholders.	None

ADB SPS, 2009 (IR Principles)	GoB, ARIPO	Measures to Bridge Gaps between ADB SPS & GoB ARIPO	ESMF under IPFF	Measures to Bridge Gaps between ADB SPS & ESMF
Principle 10: Conceive and execute involuntary resettlement as part of a development project or program. Include the full costs of resettlement in the presentation of project's costs and benefits. For a project with significant involuntary resettlement impacts, consider implementing the involuntary resettlement component of the project as a stand-alone operation.	No provisions in ARIPO	Resettlement cost has to be taken up specific to the Project requirement. – An indicative resettlement budget is included in Section 7, which will be worked out in detail as part of the Resettlement Plan.	The ESMF requires that the RP includes itemized cost estimates shall be given for all resettlement activities, including allowances for inflation, population growth, and other contingencies; timetables for expenditures; sources of funds; and arrangements for timely flow of funds, and funding for resettlement, if any, in areas outside the jurisdiction of the implementing agencies.	None
Principle 11: Pay compensation and provide other resettlement entitlements before physical or economic displacement. Implement the resettlement plan under close supervision throughout project implementation.	Land is handed over to the project proponent once payment of awards has been declared, and not necessarily before all the affected people are compensated.	Land will be handed over to the project proponent to initiate project activities only after payment of full compensation at replacement cost	World Bank's policy on Involuntary Resettlement requires payment of compensation and other assistance to project affected people before they are displaced from their existing locations and according to the ESMF, the Project sponsor shall comply with this.	None
Principle 12: Monitor and assess resettlement outcomes, their impacts on the standards of living of displaced persons, and whether the objectives of the resettlement plan have been achieved by taking into account the baseline conditions and the results of resettlement monitoring. Disclose monitoring reports.	The law has no provisions for disclosure of monitoring report	Monitoring reports to be disclosed on the website of LA Implementing Agency and ADB website.	Section 2.11 of the ESMF mentions that the *Sub-projects are required to conduct regular self-monitoring based on indicators*.	None

26. Based on the above gap analysis of the requirements for involuntary resettlement as outlined in Safeguard Policy Statement, 2009 and the ESMF under IPFF, in principle all the requirements are covered in the ESMF including in case of negotiated resettlement of specific requirement wherein a Project sponsor is required to develop procedures in a transparent, consistent, and equitable manner if land acquisition is through negotiated settlement to ensure that those people who enter into

negotiated settlements will maintain the same or better income and livelihood status. Cost of resettlement has to be prepared as part of the Resettlement Plan. In case of negotiated settlement, Petrobangla will ensure offering of a fair price with third-party oversight. An indicative resettlement budget is included in ***Section 7***, which will be worked out in detail as part of the Resettlement Plan by the Project sponsor.

27. As described earlier, the land acquisition for the onshore gas pipeline and CTMS Valve Station at *Napura*, *Banskhalli* will be undertaken by Petrobangla. The alignment of ~16 km onshore gas pipeline, connecting into the main gas grid of GTCL at *Banshkhali* will pass through *Dakshin Dhurung, Uttar Dhurung, Chhanua* and *Puichhari Union Parishads* of *Kutubdia* and *Banshkhali Upazila*s respectively.

2.6 ELIGIBILITY CRITERIA

28. All affected persons will be entitled to compensation and resettlement assistance impacted due to implementation of the Project (laying of spur gas pipeline and CTMS). Eligibility to receive compensation and other assistance will be limited by the cut-off-date. The cut-off-date for compensation under the law (ARIPO) for land owners is considered for those identified at the time of serving notice under section – 3. The cut-off-date for eligibility for resettlement assistance as mentioned in this Resettlement Framework for non-titleholders is the commencement date of the census-cum socio-economic survey applicable for land-user groups and salt pan workers. The absence of legal title will not bar affected persons from suitable compensation and assistance. The cut-off-date is applicable for the identification of affected persons due to land requisition and permanent acquisition for the pipeline route and CTMS.

29. Any structures located on non-titled land, *khas* land (government land) or requisitioned private land, if displaced, will be entitled for compensation at replacement value under the Project. Vulnerable displaced persons/ households will qualify for additional assistance to facilitate the relocation and restoration of their livelihoods also improving their standard of living. Non-vulnerable households with affected structures will be entitled to compensation for structures and assistance for shifting and reconstruction of the same.

2.7 POTENTIAL IMPACTS OF PROJECT RELATED LAND REQUIREMENT & ACQUISITION

30. The Project will have both positive and adverse impacts on social environment. The positive impacts will include temporary employment opportunity for the unskilled labourers during the construction period and business opportunities for the local people. Based on the present level of information available from the Project Developer it is anticipated that the Project is likely to have adverse social impacts pertaining to permanent

land loss (of ~4 acres for CTMS and ~26 acres for subsurface pipeline) and likely loss of income from the land to be acquired for pipeline and CTMS. As outlined in paragraphs 8, based on initial estimated number of land owners for permanent land acquisition are expected to be 1,095 with likely number of land parcels of 238 while for temporary land requisition the number of land owners are expected to be 1782 with likely land parcels of 387. The land parcels taken as part of temporary land requisition will be returned back to the land owners upon completion construction period (of ~12 months) of pipeline laying.

31. The width of the land to be required for laying of ~16 km spur pipeline will be ~15m along the pipeline route while for operation and maintenance it will be 8 m width along the pipeline route. The ownership of land will remain with Petrobangla, RBLTL will get the land for 15 years from Petrobangla.

32. As no onshore structure at *Kutubdia* Island or close to *Kutubdia* Channel are proposed, hence no potential impact on shoreline fishing activities during operation phase of LNG terminal are anticipated. The FSRU will have an exclusion zone of 500 m surrounding the FSRU/jetty for security and safety reasons. This may not directly impact fishing activities or their access routes.

2.8 ENTITLEMENT MATRIX

33. A draft Entitlement Matrix is presented in ***Table* 2.2**. This will be updated in line with the impacts identified upon finalization of the pipeline alignment and the resettlement surveys that will be carried out as part of the resettlement plan preparation. The entitlement provisions will be aligned to the requirements of the ESMF.

Table 2.2 Draft Entitlement Matrix for Land Requisition & Acquisition by Petrobangla for LNG Terminal Project, Kutubdia, Bangladesh

SN	Type of Loss	Entitled Person	Compensation
Loss of Land (for onshore spur gas pipeline and CTMS)			
1	Loss of land on the sand beach portion	Legal owner(s) of land	▪ Cash Compensation under Law [1](CCL)as per ARIPO and cash grant to cover the difference between cash compensation under law and the replacement cost[2]of land ▪ Stamp duty and registration cost incurred for replacement land purchase a the replacement value#
2	Loss of agricultural land, salt cultivation land or vacant plot	Legal owner(s) of land	▪ Cash Compensation under Law 4(CCL)as per ARIPO and cash grant to cover the difference between cash compensation under law and the replacement cost[5] of land ▪ Stamp duty and registration cost incurred for replacement land purchase a the replacement value# ▪ Option to be compensated if remaining land is no longer viable ▪ Additional compensation for vulnerable households
3	Loss of agricultural land, salt cultivation land or vacant plot	Non-titleholders (tenants, leaseholders)	▪ Compensation equivalent to monthly rental equivalent to the remaining period of existing tenancy in addition to the additional assistance to ensure livelihood restoration ▪ Additional Assistance for vulnerable households ▪ Assistance in finding alternate location
4	Loss of land	Sharecroppers	▪ 60 days advance notice to harvest standing seasonal crops, if harvest is not possible, compensation for share crop ▪ Additional assistance for vulnerable household
5	Loss of land	Vulnerable Households[6]	▪ Cash Compensation under Law (CCL)as per ARIPO and cash grant to cover the difference between cash compensation under law and the replacement cost of land ▪ Stamp duty and registration cost incurred for replacement land purchase a the replacement value# ▪ Additional assistance and compensation for vulnerable households based on the impacts assessed in the Resettlement Plan

[1] Cash Compensation under Law includes *Mouza* Rate plus the 50 % premium as per the ARIPO

[2] The rate of compensation for acquired housing, land and other assets will be calculated at full replacement costs. Where market conditions are absent or in a formative stage, the EAs will consult with the displaced persons to obtain adequate information about recent land transactions, land value by types, land titles, landuse, cropping patterns and crop production, availability of land in the project area and region and other related information. The EA will also collect baseline data on housing, house types, and construction materials. Qualified and experienced experts will undertake the valuation of the acquired assets.

[4] Cash Compensation under Law includes *Mouza* Rate plus the 50 % premium as per the ARIPO

[5] The rate of compensation for acquired housing, land and other assets will be calculated at full replacement costs. Where market conditions are absent or in a formative stage, the EAs will consult with the displaced persons to obtain adequate information about recent land transactions, land value by types, land titles, landuse, cropping patterns and crop production, availability of land in the project area and region and other related information. The EA will also collect baseline data on housing, house types, and construction materials. Qualified and experienced experts will undertake the valuation of the acquired assets.

[6] Vulnerable households/DPs will include (i) households that are headed by women with dependents, (ii) household heads with disabilities, (iii) households falling under the generally accepted indicator for poverty, (iv) elderly households who are landless and with no other means of support, indigenous peoples or ethnic minority households and (v) landless households or severely affected households.

SN	Type of Loss	Entitled Person	Compensation
Loss of Trees and Standing Crops			
6	Loss of timber and fruit bearing trees	Legal owners and non-titled users of the land as determined by DC	▪ 60 days advance notice to harvest standing fruits, if harvest is not possible, cash compensation for fruits equivalent to prevailing market price. ▪ Cash compensation for perennial fruit bearing trees based on annual net product market value multiplied by remaining productive years. ▪ Cash compensation equivalent to prevailing market price of timber for non-fruit trees.
7	Loss of standing crops	Cultivator (person who planted the crops) whether land owner, sharecropper, lessee unauthorised occupant of the land	▪ 60 days advance notice to harvest standing seasonal crops, if harvest is not possible, cash compensation for crops (or share of crops) equivalent to prevailing market price. ▪ Cash compensation for perennial crops (if any) on annual net product market value multiplied by remaining productive years.
Loss of Income			
8	Loss of income	Regular employees/ wage earners of agricultural fields/ salt pans affected by land acquisition identified during census	▪ 60 days advance notice. ▪ Assistance in finding alternate location. ▪ One time cash assistance for loss of income amount equivalent to three months income based on per month income determined during socio-economic data collection. ▪ Training allowance in the form of cash equivalent to short term training course. ▪ Additional compensation for vulnerable households. ▪ Consideration for project employment.
9	Loss of Income	Any farmer cultivating on own land that will be acquired	▪ 60 days advance notice ▪ One-time assistance for lost income equivalent to 1 year income, calculated on per annum income from land parcel due to agricultural produce determined during socio-economic data collection. ▪ Additional compensation for vulnerable households.
10	Loss of income	Any salt cultivator operating in the land at the time of issuance of notice under section 3 and /or during census	▪ 60 days advance notice. ▪ Assistance in finding alternate location. ▪ One time assistance for lost income based on replacement cost. ▪ Training allowance in the form of cash equivalent to short term training course. ▪ Additional compensation for vulnerable households. ▪ Consideration for project employment.
Temporary Loss of Income			
11	Temporary loss of income during construction of gas pipeline	Owner(s) with legal title, tenant(s), leaseholder(s), sharecropper(s)	▪ As per the RP 60 days advance notice. ▪ Restoration of affected land. ▪ Rental fees by the EA or contractor for the period of using the land or income compensation calculated based on yield of land (agricultural produce or salt) for the period of temporary loss.

SN	Type of Loss	Entitled Person	Compensation
12	Temporary loss of livelihood	salt pan worker(s) , agricultural worker(s), and any farmer(s) whose income is affected	▪ 60 days advance notice. ▪ Provision of alternative sites for continued economic activity where possible. ▪ Where provision of alternative sites is not feasible, a one-time assistance for lost income (amount calculated based on last three months average income determined during socio-economic data collection) for period of disruption.

3 SOCIO-ECONOMIC INFORMATION

3.1 SOCIAL IMPACT ASSESSMENT SURVEY

34. The IPFF clearly states that the Project Sponsor will comply with all the social safeguards as per the Social Compliance Matrix. Petrobangla, responsible for carrying out the census survey (including collection of sex disaggregated data) and Social Impact Assessment (SIA) for the Terminal Project will conduct the process as outlined in *Section 4.6*, *Chapter 4* of the IPFF. The section specifies that SIA is one of the primary requirements of the project sponsor in order to comply with social requirements. The SIA must be carried out identifying all the social impact variables, such that it incorporates all the local characteristics of the project affected areas and establishes a baseline for the variables. A general list of variables is given below as mentioned in the IPFF.

    - Population Characteristics: present population and expected change, ethnic and racial diversity, and influxes and outflows of temporary residents as well as the arrival of seasonal or leisure residents.
    - Community and Institutional Structures: the size, structure, and level of organization of local government including linkages to the larger political system
    - Political and Social Resources: distribution of power authority, the interested and affected publics, and the leadership capability and capacity within the community.
    - Individual and Family changes: factors, which influence the daily life of the individuals and families, including attitudes, perceptions, family characteristics and friendship networks.
    - Community Resources: patterns of natural resource and land use; the availability of housing and community services.

35. The approach followed for conducting SIA ensures that no critical areas are overlooked. The steps ensures public involvement, identification of alternatives, baseline conditions in zone of influence, scoping full range of social impacts that will be addressed on discussion or interviews with potentially affected persons. The process involved in conducting social impact assessment is described in the section mentioned above in the IPFF that is provided in ***Annex 1***

36. As part of the social impact assessment, the Program will identify individuals and groups who may be differentially or disproportionately affected by the project because of their disadvantaged or vulnerable status. Where such individuals and groups are identified, the Agency undertaking land acquisition and involuntary resettlement will propose and implement targeted measures so that adverse impacts do not fall disproportionately on them and they are not disadvantaged in relation to

sharing the benefits and opportunities resulting from development. The purpose of the census and the SIA is to register and document the status of the potentially affected population within the sub-project impact area/impact zone. The census will cover 100 percent of affected persons and an inventory of all losses. The census will provide a demographic overview of the population, and will cover people's assets and main sources of livelihood. A resettlement plan will be integral part of the SIA after release of notice under Section 3 of ARIPO.

3.2 VALUATION OF ASSETS & LOSSES

37. For preparation of RP cost valuation of assets need to be carried out. The valuation will be done by Property Valuation Committee (PVC). The values for the land, structures and trees will be calculated at the replacement cost[1].

3.2.1 Land

38. Land prices vary depending on the land classification within a *Mouza*, the smallest administrative land unit, in Bangladesh. Cash Compensation under Law (CCL) is calculated as per ARIPO based on the *mouza* rates [2] (for all transactions taken up during last one year) of 1and with additional top-up will be calculated on the CCL to bridge the difference between cash compensation and the replacement cost. The compensation will also add the costs applicable for stamp duty, registration and any other cost necessary for the registration of the replacement land. The current *mouza* rates can be collected from the concern Sub-Register's Office.

3.2.2 Trees

39. The compensation for trees will be paid at replacement cost according to the type of tree lost. This will be calculated based on market survey. The equivalent of remaining productive life of fruit production will be given in addition for fruit trees to take into account the average time for the tree to produce fruits.

3.2.3 Crops

40. The land owners and sharecroppers will be allowed to harvest their crop and vegetable prior to the initiation of construction works and the works will be schedule in such way so as to accommodate harvesting the existing produce. In addition, land owner/sharecropper will be provided with one

[1] Replacement cost means the method of valuing assets to replace the loss of asset at prevailing market value, plus any transaction costs such as administrative charges, taxes, registration and titling costs. Replacement cost is based on market value before the project or dispossession, whichever is higher.

[2] The Deputy Commissioner (DC) determines the *mouza* rates taking average of the land prices (land classification wise) based on the land registration taken place in the particular *mouza* in last one year.

time cash allowance equivalent to prevailing market rate of the total yield from the land parcel for one cropping season and cash compensation for perennial crops (if any) on annual net product market value multiplied by remaining productive years. These will be estimated during field surveys.

3.2.4 Replacement Cost Calculation

41. The final replacement cost of land, crops and trees will be determined by Property Valuation Committees (PVCs), which will be set up in both the *upazila* concerned by the Project at the start of the implementation of the RP. The PVCs will review and verify through additional field level investigations the replacement values (RV) proposed in the RP or RP addendum and recommend the final RV for land, structure, trees and crops by type for approval. The PVCs also consider inflation adjustments/ indexing for any delay in the additional payments. The PVCs maintain proceedings of all their deliberations.

3.2.5 Loss of Income

42. The wage earners working in agricultural fields and salt pan will receive one time cash assistance for loss of income amount equivalent to three months income based on per month income determined during socio-economic data collection. The salt pan cultivators will receive one-time assistance for lost income based on replacement cost. Any farmer cultivating on own land that will be acquired will receive one time assistance for lost income, equivalent to one year income, calculated on the per annum income from the land parcel due to agricultural produce determined during socio-economic data collection.

4 CONSULTATION, PARTICIPATION AND DISCLOSURE

4.1 CONSULTATION PARTICIPATION

43. The primary objective of consultation participation is continuing involvement of affected persons and various stakeholders throughout the project process to promote understanding and fruitful solutions to address the local needs of the communities and issues pertaining to resettlement and other issues related to the subproject.

44. Key stakeholders to be consulted are:

- Project affected persons
- Elected representatives of Union Parishads, community leaders, and representatives of community-based organizations;
- Chairman of Union Parishads, Upazila Nirbhahi Officer (UNO), Kutubdia and Banskhali Upazila
- Local NGOs; Resident Welfare Associations (RWAs), community groups, women's groups
- Deputy Commissioner, Cox's Bazar District, ADC (Revenue), Cox's Bazar District and Land Acquisition Department officials
- Local government and relevant government agency representatives, including local authorities responsible for land acquisition, protection, and conservation of forests and environment, and other relevant government departments

45. Several rounds of consultations will be conducted during SIA and RP preparation and implementation. The methodology followed for public consultations will include: (i) informing all the likely APs, ward members, local NGOs and Community Organizations of upcoming meetings, (ii) conducting the meetings and (iii) documenting the minutes of the meetings, noting the list of participants as recorded by signature and filing photographs taken of the consultations. Particular attention will be paid to the needs of the disadvantaged and vulnerable groups, especially those belonging to BPL category, landless, elderly, female-headed households, women, indigenous people, and those without legal title to land. Project agencies to ensure that any views of the APs, particularly vulnerable people, related to the resettlement process are taken into consideration and it is addressed. Project agencies ensure that groups and individuals consulted are informed about the outcome of the decision-making process and confirm how their views were incorporated. Also Gender equality will require to be ensured at all level of consultations.

4.2 DISCLOSURE

46. Information will be disseminated to APs/ DPs at various stages, including sub-project initiation phase and during the project implementation period. For the benefit of the community in general and APs in particular, a summary of the RP for each respective town will be made available in local language (Bengali) during consultation meetings and will be disclosed in public places prior to project appraisal. This will enable stakeholders to provide inputs on the resettlement process, prior to the award of civil work contracts.

47. The RP will be disclosed on ADB website, detailing information including measurement of losses, detailed asset valuations, entitlements and special provisions, grievance procedures, timing of payments, and displacement schedule. For people those who are illiterate other communication methods will be used, including verbally explaining the disclosed documents with some pictorial illustration in community meetings.

48. Petrobangla and RBLTL will engage in meaningful consultation throughout during implementation process of land acquisition and requisition; undertaken in an atmosphere free of intimidation; gender inclusive and responsive; tailored to the needs of vulnerable groups; allows for the incorporation of all relevant views of stakeholders; and establish a grievance redress mechanism. The consultation process with the affected persons and communities will be detailed in the Resettlement Plan during the land acquisition, construction and operation stages.

49. Apart from disclosing the project, its potential impacts related to land acquisition and involuntary resettlement, entitlement matrix provisions and the RP implementation, the consultations with the affected persons will include dissemination of the grievance redress mechanism process that will be established for the project. In addition to the grievance redress process, the affected persons will be informed that the use of the GRM does not preclude access to the country's legal system or accessing the ADB's accountability mechanism.

50. Grievance Redress: A grievance redress mechanism for the project is necessary for addressing legitimate concerns of affected individuals and groups who may consider themselves deprived of appropriate treatment under the project. The Sub-Borrowers mechanism would include: (a) a recording and reporting system, including grievances filed both verbally and in writing; (b) designated staff with responsibility at various levels; and (c) a time frame to address the filed grievances. This mechanism will be detailed in the sub-project safeguards documents, and must be disclosed to stakeholders. The functioning of the grievance redress mechanism will be regularly monitored and evaluated by the Borrower during project implementation.

5.1.1 Grievance Redress Committee

51. Grievance Redress Committees (GRC) will be established to ensure stakeholder participation and will promptly address the concerns and complaints using an understandable and transparent process that is gender responsive, culturally appropriate and readily accessible to the affected persons at no cost. The GRC will be chaired by the Deputy Commissioner. The GRC will have the representation of the following members:

- Deputy Commissioner of the District or any representative nominated by him
- Representative of RBLTL and Petrobangla
- Representative of RP implementing agency
- Representative of the Local Administrative Body (UNOs)
- Local member from Union parishads
- Representative of the APs

52. GRC will be responsible for resolving complaint(s) and will convene meeting once a month to review the complaint(s) received, if any. GRC will resolve complaint(s) within 30 days from the date of its receipt and will keep a record indicating the name of complainant and nature of complaint, status of resolving the complaint, decisions or actions undertaken, and the date the decision was effected. Records on grievances will be summarized and included in the monitoring reports to be submitted by Petrobangla twice a year to ADB during construction phase and annually during operation phase.

53. The GRM does not preclude any affected person from taking access to the country's legal system.

54. The key stakeholders involved in the Resettlement Plan (RP) preparation and implementation for the onshore gas pipeline and CTMS is Petrobangla (Executing Agency), the Deputy Commissioner's Office, the Agricultural Marketing Directorate, the Department of Forestry, Public Works Department (PWD), and the RP implementing agency. The main task and responsibilities of the institutions are planning, negotiating, consulting, approving, coordinating, implementing, financing, monitoring and evaluating land acquisition and resettlement and rehabilitation. In case of land acquisition and other resettlement impacts – representatives of DC, EA staff, Public Works Department (PWD), Forest Department, implementing agency and representatives from affected communities including women and members of vulnerable group will carry out joint verification of the inventory of affected persons and assets acquired to finalize the list for implementation purpose, especially for payments. An external Agency will be hired by Petrobangla, for monitoring implementation activities of the RP. The RP will outline the institutional arrangements including capacity building of the personnel implementing the RP provisions.

55. Petrobangla has implemented several transmission line projects in line with the requirements of World Bank and ADB. The due diligence confirmed that the institutional capacity of Petrobangla is adequate for preparing, implementing and monitoring resettlement activities. Petrobangla has committed to deploy experienced and qualified personnel to handle the land acquisition process and implement the RP provisions. In addition to the Petrobangla personnel on social safeguards, RBLTL will engage a social safeguards person with relevant experience in implementing RPs in line with ADB/World Bank requirements, to work closely with Petrobangla and ensure effective RP implementation. RP will detail out the institutional arrangements for RP implementation commensurate to the scale and extent of resettlement impacts.

7 BUDGET AND FINANCING

7.1 RESETTLEMENT PLAN BUDGET

56. Detailed budget estimates for RP will be prepared based on the detail designs of the project. The cost of resettlement activities, relocation and special assistance to vulnerable groups, FGDs, surveys, training, monitoring and evaluation and income restoration must be included in the RP budget.

57. The budget shall include:

- Detailed costs of land acquisition and livelihood and income restoration and improvement;
- Source of funding;
- Administrative and implementation cost;
- Cost for GRM and consultation/disclosure and
- Monitoring costs.

58. The Deputy Commissioner (DC) will place cost estimate for the land acquisition to the Project Proponent (undertaking land acquisition) for transfer of fund (to be provided to the APs) to the account of DC. The resettlement benefits and assistance such as shifting cost, business/ income restoration allowance will be made available to all APs irrespective of title as per the policy by the Project Proponent. The Project Proponent will approve the budget and arrange payment of additional compensation and resettlement grants to DPs/APs. The Project Proponent will ensure that the land acquisition and resettlement budgets are delivered on time to the DC, and that fund for compensation and entitlement under RP are fully provided to DPs/ APs prior to award of civil work contract.

7.2 INDICATIVE RESETTLEMENT BUDGET

59. The following section provides an Indicative Budget assessed based on the preliminary alignments prepared by RBLTL. These will be updated based on the finalized alignment and will be included in the RP. The indicative budget outlines the different expenditure category assessed based on certain assumptions, which are listed below:

7.2.1 Estimated Land Cost

60. Average of current (2017-18) Mouza rates for sand beach, agricultural land, salt pan, plantation and pond along the entire stretch of the gas pipeline and CTMS have been estimated. The rates are presented in ***Table 7.1*** and land cost in ***Table 7.2.***

Table 7.1 Project Related Permanent Land Cost as per Mouza Rates

Land Category	Dakshin Dhurung			Uttar Dhurung			Khudukkhali			Shekharkhil (pipeline + CTMS) Mouza Choto Chanua		
	Area in Acre	Rate BDT/ Acre	Amount in BDT	Area in Acre	Rate BDT/ Acre	Amount in BDT	Area in Acre	Rate BDT/ Acre	Amount in BDT	Area in Acre	Rate BDT/ Acre	Amount in BDT
Sand Beach	4.05	621,100	2,515,455	4.579	621,100	2,844,017	0.609	550,000	334,950	0	0	
Agri-culture	0.01	855,100	8,551	0	0	0	5.221	1,067,600	5,573,940	9.749	1,074,000	10,470,426
Salt Pan	0.237	635,500	150,613	5.251	612,600	3,216,763	0	0	0	0	0	0
Plantation	0.02	750,000	15,000	0.328	750,000	246,000	0	0	0	0	0	0
Pond	0	0	0	0	0	0	0.111	925,300	102,708	0.161	1,080,900	174,025
Total	4.317	-	2,689,619	10.158	-	6,306,779	5.941	-	6,011,598	9.910	-	10,644,451
Land Area and Cost	**30.326 Acres** **BDT 25,652,448**											

Note: The above given *mauza* rates per acre are issued by ***Kutubdia*** *Upazila* for the year 2017-18 (refer to ***Annex 3***)

Table 7.2 Estimated Replacement Cost Pipeline Route & CTMS related Permanent Land

UP/Mouza	Total Land Cost as per Mouza Rate in BDT	CCL (Land cost as per Mouza Rate + 50%) in BDT	Top-up Rate for Replacement Cost (25% of CCL) in BDT	Estimated Replacement Cost (CCL+top up) in BDT
Dakshin Dhurung	2,689,619	4,034,429	1,008,607	5,043,037
Uttar Dhurung	6,306,779	9,460,169	2,365,042	11,825,212
Khudukkhali	6,011,598	9,017,397	2,254,349	11,271,746
Shekharkhil (pipeline + CTMS) Mouza Choto Chanua	10,644,451	15,966,676	3,991,669	19,958,345
TOTAL	**25,652,448**	**38,478,672**	**9,619,668**	**48,098,339**

Note: CCL = Cash Compensation under Law Cash Compensation under Law includes Mouza Rate plus the 50 % premium as per the ARIPO; Additional top up rate of 25% is to cover difference between cash compensation under and the replacement cost of land (reference Draft Resettlement Plan for Natural Gas Infrastructure and Efficiency Improvement Project by GTCL, (Petrobangla), 2016 for Chittagong – Bakhrabadi Gas Transmission Pipeline Project as funded by ADB in the region

61. The cost for permanent land acquisition has been estimated as BDT 48,098,340/-. There will be additional cost of BDT 7,695,733/- as 16% of the estimated cost on stamp duty for the land. Thus the total estimated cost involved for permanent land acquisition will be BDT 5,57,94,060/-.

Note: Split up of additional 16% is Stamp Duty (5%)+Capital Gains(5%)+Registration Fee(2.5%)+Local Govt (2%)+VAT (1.5%). As report by Reliance Power, stamp & registration duties are exempted under Clause 13 of the Implementation Agreement with GoB. However, to be on safer side, this cost has been included in the calculation.

7.2.2 *Estimated Cost for Standing Crops & Loss of Livelihood*

Trees

62. Along the entire stretch of ~16 km spur pipeline, RBLTL team has enumerated 60 trees. An average of full grown timer trees and fruit bearing trees has been considered for calculation of compensation[1].

Standing Crops

63. RBLTL has estimated 14.98 acres of agriculture land out of 30.326 acres of land acquisition involved for laying of the pipeline. In addition, there will be temporary loss of standing crop from 10 acres of land requisition for the erection of the pipeline. The rate for crop compensation has been calculated based on information from Yearbook of Agriculture Statistics – 2016. Total yield per acre in Cox's Bazar district have been considered and it has been multiplied by support rate for paddy farmers given by Government of Bangladesh.

Salt Pan Farmers & Workers

64. Within the land acquisition proposed (30.326 acres) for the pipeline laying, there is estimated 10 acres of land involved in salt pan activities. In addition, there will be temporary loss of salt pan activities from ~5 acres of land requisition for the erection of the pipeline. The compensation for salt pan related land has been calculated based on stakeholder consultation held with Bangladesh Small and Cottage Industry Corporation (BSCIC) officials, Cox's Bazar. This office provides training and to all salt cultivators and workers in Cox's Bazar district.

Table 7.3 Estimated Cost for Loss of Livelihood due to Standing Crops, Trees & Salt Pan Activities on Land to be acquired on permanent basis

SN	Entitlement	Units	Nos.	Rate, BDT	Amount in BDT
1	Loss of Trees	Nos.	60	9,500	570,000
2	Compensation for standing crops (permanent land)	Acres	14.970	58060	869,158
3	Assistance for loss of Owner/Lease Holder of salt pan land for Land Acquisition	Acres	5.488	210,000	1,152,480
4	Assistance for loss of Wage Labour (salt pan worker)	Nos.	20	60,000	1,200,000
Total Estimated for Loss of Livelihood on Land to be acquired on Permanent basis.					**37,91,738 Say 37,91,740/-**

The cost for loss of livelihood due to standing crops, trees and salt pan activities on land to be acquired on permanent basis has been estimated as BDT 37,91,740/-.

[1] The replacement cost of land value and unit cost for trees have been estimated based on the Draft Resettlement Plan for Natural Gas Infrastructure and Efficiency Improvement Project by GTCL (Petrobangla) for Chittagong-Bakhrabad Gas Transmission Pipeline Project that was supported by ADB in the same regional area.

Table 7.4 Estimated Cost for Loss of Livelihood due to Standing Crops, Trees & Salt Pan Activities on Land to be required for Erection of the Pipeline

SN	Entitlement	Units	Nos.	Rate, BDT	Amount in BDT
1	Loss of Trees	Nos.	42	9,500	399,000
2	Compensation for standing crops on (requisition land)	Acres	20.65	35,110	725,021
3	Rent for land requisition for construction purposes (based on average rent rate per annum)	Acres	49.341	55,000	2,713,755
4	Assistance for loss of Owner/Lease Holder of salt pan Land Requisition	Acres	10.273	210,000	2,157,330
5	Assistance for loss of Wage Labour (salt pan worker)	Nos.	38	60,000	2,280,000
Total Estimated for Loss of Livelihood for land requisition					**8,275,107 Say 8,275,110/-**

Note: The average rent rate for land requisition is considered for 1 year period.

65. The cost for loss of livelihood due to standing crops, trees and salt pan activities on 49.341 acres of land required for erection of pipeline purposes involved has been estimated as BDT 8,275,110/-. Thus total cost of loss of livelihood both from 30.326 acres of permanent land acquisition and 49.341 acres of land requisition for erection of pipeline will be BDT 12,066,750 [37,91,740+8,275,110]

7.2.3 Total Estimated Cost of R&R

66. An indicative cost of BDT 82,896,890/- (refer to ***Table 7.5***) has been estimated for land acquisition and compensation for loss of income, tree and standing crops, preparation of SIA and RP and its implementation for the land acquisition and requisition.

Table 7.5 Estimated Cost of R&R for the Project related Land

SN	Entitlement	Amount in BDT
1	Estimated Cost of Land	55,794,060
2	Loss of Livelihood (from land acquisition & requisition)	12,066,750
3	Estimated Cost for Grievance Redressal Mechanism	2,500,000
4	SIA/RP Preparation and Resettlement Plan (RP) Implementation	5,000,000
Sub Total		75,360,810
5	Add Contingency Cost (including restoration of any affected aquaculture pond) @10%	7,536,080
Total Estimate Cost for R&R		**82,896,890**

8 MONITORING & REPORTING

67. The ESMF requires that the project proponents shall develop arrangements for monitoring of resettlement activities by the implementing agency, supplemented by independent monitors as considered appropriate by the Bank, to ensure complete and objective information; performance monitoring indicators to measure inputs, outputs, and outcomes for resettlement activities; involvement of the displaced persons in the monitoring process; evaluation of the impact of resettlement for a reasonable period after all resettlement and related development activities have been completed; using the results of resettlement monitoring to guide subsequent implementation. The Resettlement plan for the pipeline will include development of appropriate mechanism for monitoring of the implementation of the resettlement activities and include indicators that will be the basis for monitoring and evaluation. The RP will also include the terms of reference of the external consultant who will be responsible for the monitoring, evaluation and reporting on resettlement plan implementation.

8.1 INTERNAL MONITORING

68. Periodic monitoring will be conducted to ensure compliance of all safeguard measures requisite for involuntary land acquisition, rehabilitation and resettlement, monitoring of entitlement dispersal and livelihoods restoration and its plan implementation. Internal monitoring will be a process flow and will be achieved through an effective reporting system.

69. The Project Proponent will establish a monitoring system internally for collection, analysis, reporting and use of information about the progress of resettlement based on the RP. The internal monitoring reports on implementation will be included in Project Progress Report (PPR). Besides, semi-annual monitoring reports stipulating all efforts and outcomes will be sought by ADB from the Project Proponent. The report will contain – (i) accomplishment to date, (ii) objectives attained and not attained during the period of reporting, (iii) challenges encountered and (iv) the targets for the six months.

8.2 EXTERNAL MONITORING

70. In addition to internal monitoring, external (or independent) monitoring is required to provide an independent periodic assessment of resettlement implementation and impacts, to verify internal reporting and monitoring, and to suggest adjustment of delivery mechanisms and procedures as required. Social and economic assessments of the results of delivered

entitlements and a measurement of the income and standards of living of the PAPs before and after resettlement are integral components of this monitoring activity. An External Monitoring Agency (EMA) may be hired and engaged by the Project Proponent responsible for carrying out land acquisition and resettlement activities to conduct external monitoring under a set Terms of Reference. The external monitoring agency will be qualified and experienced agency, which will not be involved in RP implementation. The external agency would conduct periodic assessment of the RP implementation and impacts to verify internal monitoring and to suggest adjustments in delivery mechanism and procedures as required. If any gap is assessed through the process of project monitoring or through the grievance redressal mechanism, it shall be fulfilled by RBLTL through Petrobangla. The reports of External Monitoring Agency are to be prepared biannually and submitted to its contracting agency. The external monitoring reports also to be shared with ADB. The reports will be semi-annually disclosed on ADB website. External monitoring will be in two phases – compliance monitoring and social impact evaluation.

Annex 1

Example Reference of Environmental and Social Management Framework for Infrastructure Projects under Investment Promotion and Financing Facility, Bangladesh Bank

INVESTMENT PROMOTION AND FINANCING FACILITY (IPFF)
BANGLADESH BANK

REVISED
ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

Prepared by

Consultant Consortium

IIFC Infrastructure Investment Facilitation Company

Deloitte. Deloitte Touche Tohmatsu India Private Limited

IP3 Institute for Public-Private Partnerships (IP3), USA

Mahindra Mahindra Consulting Engineers Limited, India

2 December 2014

Investment Promotion and Financing Facility (IPFF)
Bangladesh Bank

REVISED

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

(ESMF)

TABLE OF CONTENT

LIST OF TABLE

LIST OF FIGURES

LIST OF ANNEXES

1 PROJECT DESCRIPTION

1.1 Project Objective

The People‟s Republic of Government of Bangladesh (GoB) with support from World Bank (WB) has taken the Investment Promotion and Financing Facility (IPFF) Project under Bangladesh Bank (BB) to open a new window for infrastructure financing through private sector participation. The project was created in the year 2006. The IPFF has made available partial debt financing through private sector Financial Intermediaries (FIs) for eligible, government-endorsed infrastructure projects to be developed by private sector. Projects developed solely by the private sector but identified by the Government to be in the public interest are also eligible for financing. The objectives of the additional financing for IPFF project are :

i. To supplement the resources of the Bangladesh financial markets to provide term finance for infrastructure and other investment projects beyond the capacity of local financial institutions and

ii. To scale up the financing of Public Private Partnership (PPP) ventures in infrastructure already started.

The proposed operations will support Bangladesh Bank, the implementing agency, to scale up the financing of PPP ventures in infrastructure. The increased provision of infrastructure will create or help maintain jobs during the economic slowdown and remove bottlenecks in economic growth caused by existing infrastructure shortages.

Funds are allocated to local financial institutions for on-lending to private sector infrastructure projects selected by the government. Financing comes from the government but is administered by BB. Bangladesh Bank has signed Master Facility Agreements with the selected Participating Financial Institutions (PFI) for extending such loan. Sub-loans to PFIs, for investment projects eligible for financing from the facility, are approved by the BB as agent of GoB subject to World Bank‟s „No Objection.

Projects are supported on market terms and require at least a 25% equity component from the private infrastructure promoter and a further minimum of 15% third-party funding which may come from the PFIs. The PFIs are required to co-invest as well as assume all commercial credit risk to reinforce alignment of their interests and those of the government. BB is carrying out the selection of PFIs on a transparent basis. Eligibility is restricted to local financial institutions licensed by BB.

Bangladesh Bank has signed a Technical Services Agreement (TSA) with Infrastructure Investment Facilitation Company (IIFC), Dhaka on 1 July 2012 to assist BB in administering the facility.

1.2 Project Components

The International Development Association (IDA) credit facility through the IPFF Project is available for financing Private Infrastructure Projects of following sectors or sub sectors:

i. power generation, transmission, distribution, renewable energy and services.

ii. port development (sea, river and land) including inland container terminals,

inland container depot and other services.

iii. environmental, industrial and solid waste management projects.

iv. highways and expressways including mass-transit, bridges, tunnels, flyovers, interchanges, city roads, bus terminals, commercial car parking, etc.

v. airports, terminals and related aviation facilities.

vi. water supply and distribution, sewerage and drainage.

vii. industrial estates and parks development.

viii. Information and Communications Technology (ICT).

ix. social sector including health and education.

Approval of credit from the IPFF project precedes due diligence in compliance with the environmental requirement of DOE and WB guidelines.

1.3 Sub-Project Selection

A sub-project is defined as an activity, or grouping of like activities that are within a primary sector (in this case infrastructure projects) covered by the project. Each sub-project must be part of a Public Private Partnership (PPP), with the request for financing through IPFF being made by the Participating Financial Intermediary (PFI) bank on behalf of the private sector entrepreneur. Each sub-project is bound by the legal requirements of the IPFF project, including fiduciary and safeguards aspects. Three general types of sub-projects are likely to be included: (i) those eligible for retroactive financing (or re-financing) under the project, (ii) straightforward construction/rehabilitation/expansion sub-projects and (c) those that arise in response to crises or emergencies.

The selection of the sub-projects follows a framework approach, which is used when only the principles of a project and the criteria for sub-project selection are determined before appraisal, since not all individual investments can be identified and appraised before WB Board approval of a project (in this case, the IPFF project).

1.4 Need for ESMF Framework

Although the general thrust and broad project interventions are well understood, the specific details about multiple sub-projects located across the country, and thereby the nature and scale of their potential impacts, will be known only later. In such a situation, where sub-projects are located with varying geographical, topographical and socio-economic conditions, a need was felt to prepare a document that will „guide" the planning, design, construction and implementation/operation elements of sub-projects, as applicable, and help in harmonizing the principles/approaches for project preparation and execution. In this context, an Environment and Social Management Framework (ESMF) has been prepared.

The ESMF is a handbook on environmental and social safeguard policies, laws and regulations of both World Bank (WB) and Government of Bangladesh (GoB) to be complied or followed by the sub-projects and the financial institutions (PFIs) requesting for IPFF loan.

It provides a working guideline for assessing environmental and social impacts of sub-projects and activities and the regulatory requirements and management plans to be complied with for minimization, mitigation, management and monitoring of the impacts.

1.5 Purpose and Objectives of ESMF

The ESMF will establish the objectives, procedures, institutional, framework and implementation arrangements for identifying and managing potential environmental and social impacts of the project activities. It will form part of the project„s Operations Directive. It will address mechanisms for public consultation and disclosure of project documents as well as redress of possible grievances and includes guidance on rapid response to crises and emergencies, in case this is needed, during project implementation.

ESMF"s objectives are:

i. To establish clear procedures and methodologies for the social and environmental screening, review, approval and implementation of sub-projects to be financed under IPFF.
ii. To specify appropriate roles and responsibilities and outline the necessary reporting procedures, for managing and monitoring social and environmental concerns related to sub-projects.
iii. To determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF and
iv. To identify funding requirements for the ESMF implementation for inclusion in the project cost.

ESMF will guide the Bangladesh Bank and other actors relevant to project implementation (e.g. PFIs and private entrepreneurs) in: i) carrying out appropriate assessment of environmental and social impacts; ii) planning, implementing and monitoring/supervising necessary environmental and social mitigation and management measures for these sub-projects during the implementation phase, in compliance with relevant World Bank Safeguard Policies, Environment, Health and Safety (EHS) Guidelines, and the Bangladesh regulatory requirements.

1.6 Key Contents of ESMF

The framework describes the principles, objectives and approach to be followed for selecting, avoiding, minimizing and/or mitigating the adverse social and environmental impacts that are likely to arise due to the project. The framework details out the various policies, guidelines and procedures that need to be integrated during the planning, design and implementation cycle of the Bank-funded project. It also outlines the indicative management measures required to effectively address or deal with the key issues that have been identified. The required institutional arrangements for effective environment management have also been outlined as a part of this framework. Specifically, the ESMF includes the followings:

i. Information on GoB"s Environmental Legislations, Standards and Policies and World Bank Safeguard Policies that are relevant in the over-all project context.

ii. Process to be followed for environmental and social screening and due diligence to guide decision-making by Bangladesh Bank and PFIs about proposed sub-projects.

iii. Steps and process to be followed for conducting Environmental and Social Impact Assessment (ESIA), Environmental and Social Audits (when applicable), and preparation of Environmental and Social Management Plans for proposed sub-projects.

iv. Generic guidance on considerations for ESIA, generic environment and social management measures to avoid, minimize and mitigate anticipated impacts, as well as specific guidance on compliance with World Bank policies on involuntary resettlement and indigenous peoples.

v. Institutional arrangements for environment and social management, including monitoring & reporting by project entrepreneurs, and supervision monitoring by lending institutions.

1.7 Application of ESMF

The ESMF needs to be integrated into the preparation and implementation stages of the various project components. It is an essential ingredient aligned with the project/sub-project activities and is to be followed through the entire project cycle from planning, including site identification, design, implementation and operation/maintenance to attain the above outlined purpose and objectives.

1.8 Users of ESMF

As a core policy and procedural document for the IPFF projects, the ESMF is designed for use by the following actors:

IPFF Project Staff: As a document enshrining operating principles and guidelines to ensure that projects are adequately assessed to ensure compliance with environmental and social standards.

Private sector Project Sponsors and PFIs: As a document that spells out requirements with respect to environmental and social issues that need to be met, for obtaining finance for IPFF.

Executing Agencies: As a document for Executing Agencies, the public agencies that are sponsoring PPPs in to use a reference guide for ensuring E&S compliance prior to their award, for PPP projects that are likely to receive IPFF funding.

Project Associates: Stakeholders, consultants, other lenders, etc. As a document that explains the compliance requirements for environmental and social requirements for projects that receive financing for IPFF projects.

Other relevant government agencies, including DoE, for reference.

1.9 Revision/Modification of ESMF

The ESMF will be an „up-to-date" or a „live document" enabling revision, when and where necessary. Unexpected situations and/or changes in the project or sub-component design would therefore be assessed and appropriate management measures will be incorporated by updating the ESMF. Such revisions will also cover and update

any changes/modifications introduced in the legal/regulatory regime of the country. Also, based on the experience of application and implementation of this framework, the provisions and procedures would be updated, as appropriate in consultation with the World Bank and the implementing agencies/ departments.

1.10 Bangladesh Legal Framework

The requirements for compliance with environmental regulations are laid down by the policy, legal and regulatory framework in the country. A large number of laws related to environmental issues exist in Bangladesh. The most important of these are the Environment Conservation Act, 1995 (ECA 1995) and the Environment Conservation Rules, 1997 (ECR 1997). Many of the other laws are cross-sectoral and are only partially related to environmental issues.

The primary institution for environmental regulation in Bangladesh is the Department of Environment (DoE) working under the Ministry of Environment and Forest (MoEF). The ECA1995 is primarily an instrument for DoE and for controlling industrial pollution. The ECR, 1997 was promulgated under ECA 1995 to operationalize the enforcement of the Act. The Environmental Clearance Certificate (ECC) is mandatory for the existing industries as per clause 7(3) of the ECA, 1995 and the ECR, 1997 and proposed projects as per Rule 7 and schedule 1 of ECR.

Depending on the extent of impact on the environment, industries and projects are classified in four different categories under the ECR 1997. The four categories are:

1) Green;
2) Orange – A and ;
3) Orange- B;
4) Red

1. Green Category

Projects, which do not have any negative impact on the environment, belong to Green category.

2. Orange A Category

Orange category includes those projects that produce such wastes that can produce moderate or significant impacts on environment but the impacts could be mitigated easily if proper action is undertaken. Depending on the nature and extent of impacts the projects under Orange category has been sub-divided into two sub-categories-Orange A and Orange B.

The projects/industries categorized under “Orange-A”. likely to produce some wastes but those are not harmful for surrounding environment and can be managed easily

3. Orange B Category

The “Orange-B” category projects/industries are those likely to produce adverse environmental impacts but not to any significant level and that the impacts can be easily mitigated with no residual adverse impacts.

Orange B category projects need to conduct IEE which help in understanding the potential extent of environmental changes. IEE of the project or industry reveals

that further investigation is to be carried out the sponsors will have to carry out a detailed EIA

4. Red Category

This category includes industries, first requiring IEE for the purpose of obtaining site clearance, and then EIA, for obtaining environmental clearance (ECC). In this case also an application has to be made in a prescribed format along with an IEE report, on the basis of which site clearance may be granted with suitable conditions or the project may be rejected, on grounds of unsuitable location. If the site clearance is granted, the project proponent can go ahead with implementation of the project subject to the conditions as may be stipulated while granting the site clearance.

List of Different Categories of Industrial units or projects are shown in Annex- A

DoE issues the following clearances to the sponsors depending on the category of the project (Table 2.1):

i. Issuing Site Clearance Certificate (SCC) for Orange-A, Orange-B and Red category projects, on basis of Initial Environmental Examination (IEE).
ii. Approving TOR for EIA, and completed EIA, for Red category projects, and
iii. Issuing Environmental Clearance Certificate (ECC) for all category projects.

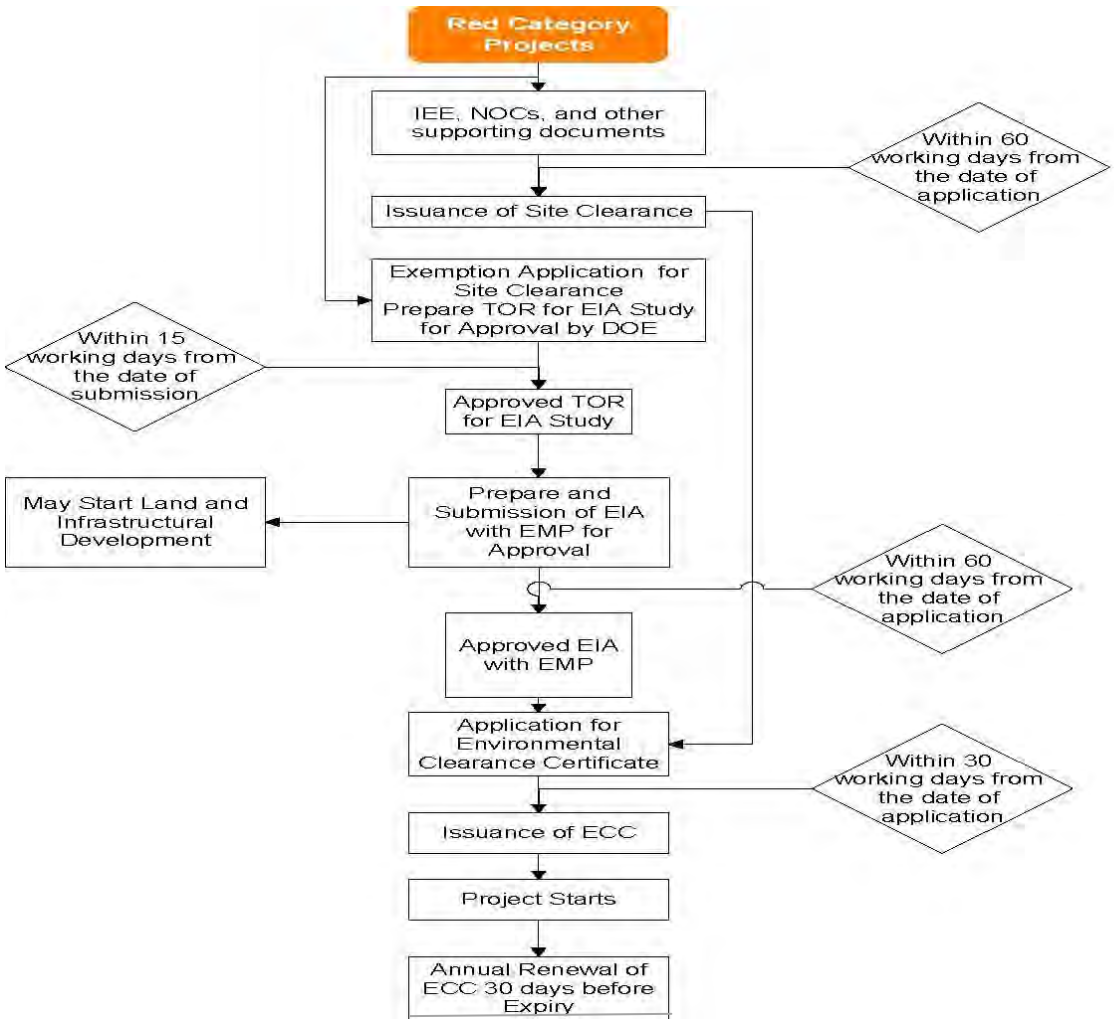
Table 1.1: DoE Categorization of Industries

Project Category	DoE Certificate	Documents to be submitted
Green	ECC	i. Application (in Form-3) ii. Necessary treasury challan iii. General information on the industry iv. Raw materials & finished products v. Registration certificate from BOI (if applicable) vi. NOC from local authority vii. Land ownership/ rental deed etc (if applicable) viii. Rehabilitation Action Plan (RAP) if applicable
Orange-A	SCC, ECC	i. Application (in Form-3) ii. Same documents, as required for Green Category projects iii. Additional documents: process flow diagram, layout plan waste discharge, treatment and disposal arrangement etc. iv. Rehabilitation Action Plan, if applicable
Orange-B	SCC, ECC	i. Application (in Form-3) ii. Same documents, as required for Green Category projects. Additional documents: Initial Environmental Examination (IEE) iii. Feasibility Report, Information / report as specified in the iv. checklist given in the IEE eg. map, process flow diagram, layout plan showing waste discharge, treatment and disposal arrangement. v. Rehabilitation Action Plan, if applicable

Project Category	DoE Certificate	Documents to be submitted
Red	SCC, Approval of EIA, ECC	i. Application (in Form-3) ii. Feasibility Report (applicable only for new industries) iii. IEE Report including TOR for EIA iv. Process flow Diagram v. Layout Plan with location of facility vi. Drawing of the facility vii. Time Frame (for new industries only) viii. EMP along with process flow diagram, layout Plan with facility location & facility Scheme (for Existing Industry only) ix. Pollution Abatement Plan and emergency Plan x. NOC from local Authority xi. Rehabilitation Action Plan, if applicable.

The DoE clearance process for a Red Category Project is illustrated in the flow chart presented below.

Figure 1-1: DoE Clearance Process



1.11 Environment Related Policies in Bangladesh

The relevant policies which regulate environmental management in Bangladesh and also relevant to projects that may be financed by IPFF, are:

i. National Environmental Policy, 1992
ii. National Environmental Management Action Plan, 1995
iii. National Conservation Strategy, 1992
iv. National Water Policy, 2000
v. National Water Management Plan, 2001

1.11.1 *National Environmental Policy, 1992*

The Bangladesh National Environmental Policy sets out the basic framework for environmental action together with a set of broad sectoral action guidelines. Key elements of the policy are:

i. Maintenance of the ecological balance and overall progress and development of the country through protection and improvement of the environment;
ii. Protection of the country"s assets, properties and resources against natural disasters;
iii. Identification and regulation of all types of activities which pollute and degrade the environment;
iv. Ensuring sustainable utilization of all natural resources;
v. Promoting active association with all environment related international initiatives.

The Environmental Policy requires the following specific actions with respect to the „Industrial" sector:

i. To phase in corrective measures in polluting industries
ii. To conduct Environmental Impact Assessment for all new public and private industrial developments (Red Category), or IEE for other categories.
iii. To ban, or find environmentally sound alternatives for, the production of goods that cause environmental pollution and
iv. To minimize waste and ensure sustainable use of resources by industry.

Under the National Environmental Policy, Department of Environment is directed to review and approve all Environmental Impact Assessments.

1.11.2 *National Environmental Management Action Plan, 1995*

The National Environmental Management Action plan (NEMAP) is a wide-ranging and multi-faceted plan, which builds on and extends the statements set out in the National Environmental Policy. NEMAP was developed to address issues and management requirements and set out the framework within which the recommendations of the National Conservation Strategy are to be implemented. NEMAP has the following broad objectives:

i. Identification of key environmental issues affecting Bangladesh
ii. Identification of actions necessary to halt or reduce the rate of environmental degradation
iii. Improvement of the natural environment
iv. Conservation of habitats and bio-diversity
v. Promotion of sustainable development and
vi. Improvement of the quality of life of the people.

1.11.3 *National Conservation Strategy, 1992*

The National conservation strategy provides recommendations for sustainable development in the industrial sector as follows:

i. All industries (that are most pollutant and environmentally harmful) will be subject to EIA and adoption of pollution prevention/ control technologies
ii. Hazardous or toxic materials/wastes will not be imported as raw materials for industry
iii. Import of appropriate and environmentally sound technology will be ensured; and
iv. Dependence on imported technology and machinery should gradually be reduced in favor of sustainable local skills and resources.

1.11.4 *National Water Policy, 2000*

The National water policy recognizes that continued development and management of the nation‟s water resources is essential and includes protection, restoration and preservation of the environment and biodiversity including wetlands, mangrove and other natural forests, endangered species and water quality. It also states objectives for all agencies and departments entrusted with water management in regards to their responsibilities for regulation, planning, construction, operation and maintenance. Pollution of surface and ground water around various industrial centers from untreated effluent discharge into water courses is a critical water management issue.

The Policy of the Government in this regard is that:

i. Zoning regulations will be established for location of new industries in consideration of safe water availability and suitable effluent discharge possibilities
ii. Effluent disposal will be monitored by relevant government agencies to prevent water pollution
iii. Standards of effluent disposal into common watercourses will be set by Water Resources Planning Organization (WARPO) of the Ministry of Water Resources in consultation with DoE and
iv. Industrial polluters will be required by law to pay for remedial clean up of water bodies polluted by them.

1.11.5 *National Water Management Plan, 2001*

The National Water Management Plan addresses options for water quality, considerations behind measures to clean up industrial pollution, where effluent

discharge monitoring and zoning regulations for new industries are emphasized.

1.12 International Obligations

Bangladesh is party to a number of international environmental Conventions, Treaties and Protocols. These have to be taken into account in the implementation of the projects and subprojects wherever applicable. It is to be noted that EIA only need these to address considering their implication for the subproject. These agreements are summarized for in the following:

i. International Plant Protection Convention, Rome, 1951 (Ratified 1978)
ii. International Convention for the Prevention of Pollution of the Sea by Oil, London, 1954 (Ratified 1981)
iii. Convention on Wetlands of International Importance, especially as Waterfowl Habitat, Ramsar, 1971 (Ramsar Convention) (Ratified 1992)
iv. Convention Concerning the Protection of the World Cultural and Natural Heritage, Paris, 1972 (World Heritage Convention) (Ratified 1983)
v. Convention on International Trade in Endangered Species of Wild Fauna and Flora, Washington, 1973 (CITES Convention) (Ratified 1982)
vi. Agreement on the network of Aquaculture Centers in Asia and Pacific (NACA), 1988
vii. Montreal Protocol on Substances that Deplete the Ozone Layer, Montreal, 1987 (Ratified 1990), (London Amendment, 1990) (Ratified 1994).
viii. Convention on Biological Diversity, Rio de Janeiro, 1992 (Ratified 1994).
ix. International Convention to Combat Desertification, 1994.
x. Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal, Basel, 1989 (Ratified 1993).
xi. United Nations Framework Convention on Climate Change, New York, 1992 (Ratified, 1994).

1.13 Ecologically Critical Area

Ecologically critical areas are those having significant value in their natural state, or having socio-cultural significance or sensitivity. Ecologically Critical Areas can be defined as areas that may contain unique features, cultural or historical sites, maintain key natural processes, support endangered, endemic or threatened plants or animals and their habitats, or provide important breeding areas for wildlife.

If the Government is satisfied that the eco-system of an area is in an environmentally critical situation or is threatened to be in such situation, the Government may, by notification in the official Gazette declare such area as an ecologically critical area. Activities that may deteriorate the environment further are prohibited in the declared ecologically critical areas (Amendment of Environmental Conservation Act 1995, on 5 October 2010). The list of ecologically critical areas declared by the government is given in the table below.

Table 1.2: Ecologically Critical Areas Declared By DOE

Ecologically Critical Areas (ECAs)	Total Area, (Ha)	Name of District	Name of Upazila	Name of Union/ Pourashava	Name of Mouza
Sundarbans	7,62,034	Bagerhat, Khulna and Satkhira	Upazilas within 10 km peripheral distance of the identified reserve forest area.	Unions/ Poura-shavas under the Upazilas listed in the previous column.	Mouzas under the Unions/Pourashavas listed in the previous column.
Cox's Bazar-Teknaf sea beach	10,465	Cox's Bazar	Cox's Bazar	Cox's Bazar, Zilonja, and Khuruskul	Sea beach, sand rim, estuary, forest, wetland, etc. as recorded in the register of Land Revenue Dept., Cox'sBazar.
			Ramu	Khunia Palong	Jungle Khunia Palong, Jungle Dhoa Palong, Pecher Deep and Jungle Gorasia Palong.
			Ukhia	Ukhia and Zalira Palong	Zalira Palong and Inani
			Teknaf	Teknaf, Bahar Chara and Sabrang	Teknaf (excluding Bazar and Border Check post), Silkhali, Sabrang, Shah Porar Deep (excluding border check post) and Bordayle
Saint Martin Deep (island)	590	Cox's Bazar	Teknaf	Saint Martin Deep (island)	Narikel Jinjira
Sonadia Deep (island)	4,916	Cox's Bazar	Moheshkhali	Kutubjum	Sonadia, Ghoti Bhanga (part)
Hakaluki Haor	18,383	Moulvi Bazar and Sylhet	Borolekha, Kulaura, Fenchuganj and Golapganj	Sujanagar, Barni, Talikpur, Poschimjuri, Jafarnagar, Boromchol, Boksimali, Vatera,	Water bodies, recorded as Beel in the register of Land Revenue Department, located in all Mouzas/part of
				Gilachhara,	Mouzas under the

Ecologically Critical Areas (ECAs)	Total Area, (Ha)	Name of District	Name of Upazila	Name of Union/ Pourashava	Name of Mouza
				Uttar Bade Pasa and Sharifganj	jurisdiction of Unions listed in the previous column.
Tanguar Haor	9,727	Sunamganj	Taherpur and Dharmopasa	Uttar Srepur, Dokkhin Srepur, Uttar Bonsikundi and Dokkhin Bonshikundi	Water bodies, recorded as Beel in the register of Land Revenue Department, located in all Mouzas/part of Mouzas under the jurisdiction of Unions listed in the previous column.
Marjat Baor	200	Jhenaidah	Kaliganj	Water bodies, recorded as Beel in the register of Land Revenue Department, located in all Mouzas/part of Mouzas under the jurisdiction of Unions listed in the previous column.	Water bodies, recorded as Beel in the register of Land Revenue Department, located in all Mouzas/part of Mouzas under the jurisdiction of Unions listed in the previous column.

1.14 Social-Relevant National Legislation

1.14.1 *Acquisition and Requisition Ordinance, 1982*

In 1982, the Acquisition and Requisition of Immovable Property Ordinance came in force. This law is the major basis for all the present actions regarding acquisition, resettlement and rehabilitation issues. The relevant and salient features of the law include the matters to be considered in determining compensation include:

i. the market value of property
ii. damage to standing crops or trees due to acquisition
iii. damage due to severance of acquired property from other property at the time of actual taking of permission by concerned authorities
iv. damage to other properties or earnings
v. expenses for relocation of residence
vi. damage due to lowering of profit of the property to be acquired between the serving of acquisition notice and actual acquisition

The present laws, acts, regulations and rules are not very explicit regarding

resettlement and rehabilitation of project-affected persons (PAPs). Entitlement here means the rights of the persons adversely affected by the project to receive certain benefits from the project authorities to compensate for their losses that may include land and other immovable property, income, standing crops, occupation etc. The compensation is often in terms of cash grants but also includes training and credit facilities and other necessary facilities in resettlement and rehabilitation.

1.14.2 *Antiquities Act 1968*

This legislation governs preservation of the national cultural heritage, protects and controls ancient monuments, regulates antiquities as well as the maintenance, conservation and restoration of protected sites and monuments, controls planning, exploration and excavation of archaeological sites.

1.14.3 *Building Construction Act 1952*

An Act to provide for the prevention of haphazard construction of building and excavation of tanks which are likely to interfere with the planning of certain areas in Bangladesh.

1.14.4 *Factories Act, 1965 and Bangladesh Labor Law, 2006*

These Acts pertain to the occupational rights and safety of factory workers and the provision of a comfortable work environment and reasonable working conditions.

1.15 World Bank Safeguard Policies

Operational Policies (OPs) have been identified by World Bank Management as being particularly important in ensuring that Bank operations do no harm to people and the environment. There are 10 safeguard policies, comprising the Bank's OP 4.01 on Environmental Assessment (EA) and policies on : Cultural Property (OP 4.11), Disputed Areas (OP 7.60), Forestry (OP 4.36), Indigenous Peoples (OP 4.10), International Waterways (OP 7.50), Involuntary Resettlement (OP 4.12), Natural Habitats (OP 4.04), Pest Management (OP 4.09) and Safety of Dams (OP 4.37). The Bank undertakes screening of each proposed project to determine the appropriate extent and type of EA to be undertaken and whether or not the project may trigger other safeguard policies. The Bank classifies the proposed project into one of four categories (A, B, C, and FI) depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts.

The Borrower is responsible for any assessment required by the Safeguard Policies, with general advice provided by Bank staff.

All WB projects are assigned one of four categories viz. A, B, C or FI, for Environmental Assessment (EA). The category is assigned based on the project's potential for environmental impact. The category is used to determine the environmental assessment requirements for the project, and staff and budget resources required to do the EA.

For IPFF, subprojects may be classified as any of the following. Additional guidance is provided in section table 3-1.

Category A: A proposed project is classified as Category A if it is likely to have significant adverse environmental impacts that are sensitive, diverse, or

unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works. EA for a Category A project examines the project's potential negative and positive environmental impacts, compares them with those of feasible alternatives (including the "without project" situation), and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance.

Category B: A proposed project is classified as Category B if its potential adverse environmental impacts on human populations or environmentally important areas--including wetlands, forests, grasslands, and other natural habitats--are less adverse than those of Category A projects. These impacts are site-specific, few if any of them are irreversible, and in most cases mitigatory measures can be designed more readily than for Category A projects. The scope of EA for a Category B project may vary from project to project, but it is narrower than that of Category A.

Category C: A proposed project is classified as Category C if it is likely to have minimal or no adverse environmental impacts. Beyond screening, no further EA action is required for a Category C project.

Table 2.5 outlines the core requirements under each policy. The applicability of each policy at a subproject level is confirmed through the screening and assessment process.

Table 1.3: World Bank Safeguard Policies

Policy	Objective	Operational Principle
Environmental Assessment (OP/BP 4.01)	To ensure the environmental and social soundness and sustainability of investment projects.	Screen early for potential impacts and select appropriate instruments to assess, minimize, and mitigate potentially adverse impacts. Use sectoral or regional environmental assessment when appropriate.
Natural Habitats (OP/BP 4.04)	To promote environmentally sustainable development by supporting the protection, conservation, maintenance, and rehabilitation of natural habitats and their functions.	Avoid significant conversion or degradation of critical natural habitats, including those habitats that are (a) legally protected, (b) officially proposed for protection, (c) identified by authoritative sources for their high conservation value, or (d) recognized as protected by traditional local communities. Support projects that affect non-critical habitats only if no alternatives are available and if acceptable mitigation measures are in place. Determine if project benefits substantially outweigh potential environmental costs.
Forests (OP/BP 4.36)	To realize the potential of forests to reduce poverty in a sustainable manner, integrate forests effectively into sustainable economic development, and protect the	Screen as early as possible for potential impacts on forest health and quality and on the rights and welfare of the people who depend on them. Do not finance projects that would involve significant conversion or degradation of critical

Policy	Objective	Operational Principle
	vital local and global environmental services and values of forests.	forest areas or related critical natural habitats, or that would contravene applicable international environmental agreements. Support projects that adversely impact non-critical natural forests or related natural habitats only if viable alternatives to the project are not available and only if appropriate conservation and mitigation measures are in place. Support sustainable and conservation-oriented forestry.
Pest Management (OP 4.09)	To minimize and manage the environmental and health risks associated with pesticide use and promote and support safe, effective, and environmentally sound pest management.	Support integrated approaches to pest management. Identify pesticides that may be financed under the project and develop appropriate pest management plan to address risks.
Physical Cultural Resources (OP/BP 4.11)	To assist in preserving physical cultural resources (PCR) and avoiding their destruction or damage. PCR includes resources of archaeological, historical, architectural, religious (including graveyards and burial sites), aesthetic, or other cultural significance.	Investigate and inventory cultural resources potentially affected. Include mitigation measures when there are adverse impacts on physical cultural resources. Include "chance find" procedures in construction contracts.
Involuntary Resettlement (OP/BP 4.12)	To avoid or minimize involuntary resettlement and, where this is not feasible, to assist displaced persons in improving or at least restoring their livelihoods and standards of living in real terms relative to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.	Assess all viable alternative project designs to avoid, where feasible, or minimize involuntary resettlement. Identify, assess, and address the potential economic and social impacts of the project that are caused by involuntary taking of land (e.g., relocation or loss of shelter, loss of assets or access to assets, loss of income sources or means of livelihood, whether or not the affected person must move to another location). This covers both people with legal title as well as without title to the land in question. Consult project-affected persons, host communities and local nongovernmental organizations, as appropriate. Assist displaced persons in their efforts to improve or at least restore their standards of living.
Indigenous Peoples (OP/BP	To design and implement projects in a way that fosters	Screen early to determine whether Indigenous or Tribal Peoples are present in, or have

Policy	Objective	Operational Principle
4.10)	full respect for Indigenous Peoples‟ dignity, human rights, and cultural uniqueness and so that they: (a) receive culturally compatible social and economic benefits; and (b) do not suffer adverse effects during the development process.	collective attachment to, the project area. Identify adverse impacts and develop a plan to address them. Undertake free, prior and informed consultation with affected Indigenous or Tribal Peoples to ascertain their broad community support for projects affecting them and to solicit their participation: (a) in designing, implementing, and monitoring measures to avoid adverse impacts, or, when avoidance is not feasible, to minimize, mitigate, or compensate for such effects; and (b) in tailoring benefits in a culturally appropriate manner.
Safety of Dams (OP/BP 4.37)	To assure quality and safety in the design and construction of new dams and the rehabilitation of existing dams, and in carrying out activities that may be affected by an existing dam.	Identify existing dams and dams under construction that can influence the performance of the project and implement necessary safety measures/remedial works. For large dams, technical review and periodic safety inspections by independent dam safety professionals.
International Waterways (OP/BP 7.50)	A potential international water rights issue is assessed as early as possible during project identification1and described in all project documents starting with the Project/Program Information Document (PID).	Ascertain whether riparian agreements are in place, and ensure that riparian states are informed of and do not object to project interventions.
Disputed Areas (OP/BP 7.60)	The presence of any territorial dispute affecting a proposed Bank project is ascertained as early as possible and described in all project documents.	Ensure that claimants to disputed areas have no objection to proposed project.

All Bank projects are also required to comply with the Bank‟s requirements on Public Consultation and Information Disclosure. At the investment level, these are outlined under OP 4.01 (which specifies that consultation with affected peoples is required during the preparation of each investment and that the ESA and other safeguards documents must be disclosed in appropriate form and language in a publicly accessible location before World Bank approval of the investment). The World Bank Information Disclosure Policy (OP 17.50) further defines the Bank‟s requirements for giving the public access to project information and documentation, indicating a presumption in favour of disclosure unless confidentiality can be specifically justified.

1.16 WBG Environmental, Health and Safety Guidelines

Besides DOE requirement, the following World Bank Group"s Environmental, Health and Safety Guidelines are also applicable for Environmental and Social Management Plan. For user"s convenience some of the websites of the World Bank"s Guidelines are given below.

i) Operational Policies (OP) of the World Bank:

http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTOPMANUAL/0,,menuPK:4564185~pagePK:64719906~piPK:64710996~theSitePK:502184,00.html

a. OP 4.01 – Environmental Assessment

http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTOPMANUAL/0,,contentMDK:20064724~menuPK:64701637~pagePK:64709096~piPK:64709108~theSitePK:502184,00.html

b. OP 4.12 – Involuntary Resettlement

http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTOPMANUAL/0,,contentMDK:20064610~menuPK:4564185~pagePK:64709096~piPK:64709108~theSitePK:502184,00.html

c. OP 4.09 – Pest Management

http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTOPMANUAL/0,,contentMDK:20064720~menuPK:64701637~pagePK:64709096~piPK:64709108~theSitePK:502184,00.html

d. OP 4.04 – Natural Habitats

http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTOPMANUAL/0,,contentMDK:20064757~menuPK:64701637~pagePK:64709096~piPK:64709108~theSitePK:502184,00.html

e. OD 4.30 – Involuntary Resettlement

http://www.ifc.org/wps/wcm/connect/322d9d80488559f584b4d66a6515bb18/OD430_InvoluntaryResettlement.pdf?MOD=AJPERES

ii) IFC Environmental, Health, and Safety General Guidelines:

http://www.oe-eb.at/en/osn/DownloadCenter/guidelines/Environmental-Social-Standards-World-Bank-Group.pdf

iii) The above General EHS Guidelines are designed to be used together the relevant Industry Sector EHS Guidelines which provide guidance to the users on EHS issues in specific industry –sector guidelines can be found at:

WWW.ifc.org/ifcext/enviro.nsf/content/EnvironmentalGuidelines

iv) Handbook *for Preparing a Resettlement Action Plan, IFC, World Bank*

http://commdev.org/userfiles/ResettlementHandbook.pdf

v) Involuntary Resettlement Sourcebook, World Bank

http://www4.worldbank.org/afr/ssatp/resources/html/gender-rg/Source documents%5CTool Kits & Guides%5CDesigning Projects/TLPRO10 involresettlementsourcebookWB.pdf

1.17 IFC Exclusion List

The International Finance Corporation (IFC) and the Multilateral Investment Guarantee Agency (MIGA) are the private sector affiliates of the International Bank for Reconstruction & Development (IBRD) and the International Development Agency. The IFC is the private sector lending arm of the World Bank Group. Its stated mission is "to promote sustainable private sector investment in developing countries, helping to reduce poverty and improve people's lives."

MIGA is the political risk insurance arm of the World Bank Group. MIGA gives private enterprises investing in developing countries non-commercial risk insurance and provides developing country members with technical assistance regarding investment promotion. MIGA guarantees protected investors against loss resulting from expropriation, breach of contract, war and civil disturbance including insurrection, coups d'état, revolution, sabotage and terrorism.

The IFC Exclusion List, outlined below, defines the types of projects that IFC does not finance. The IPFF Project also considers any subproject falling into any of the excluded categories below to be ineligible for IPFF financing:

i. Production or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements, or subject to international bans, such as pharmaceuticals, pesticides/herbicides, ozone depleting substances, PCB, wildlife or products regulated under CITES.
ii. Production or trade in weapons and munitions.
iii. Production or trade in alcoholic beverages (excluding beer and wine).
iv. Production or trade in tobacco.
v. Gambling, casinos and equivalent enterprises.
vi. Production or trade in radioactive materials. This does not apply to the purchase of medical equipment, quality control (measurement) equipment and any equipment where IFC considers the radioactive source to be trivial and/or adequately shielded.
vii. Production or trade in unbonded asbestos fibers. This does not apply to purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20%.
viii. Drift net fishing in the marine environment using nets in excess of 2.5 km in length.

A reasonableness test will be applied when the activities of the project company would have a significant development impact but circumstances of the country require adjustment to the Exclusion List.

All IPFF Participating Financial Intermediaries (PFIs) must apply the following exclusions, in addition to IFC's Exclusion List:

i. Production or activities involving harmful or exploitative forms of forced labor/harmful child labor.
ii. Commercial logging operations for use in primary tropical moist forest.
iii. Production or trade in wood or other forestry products other than from sustainably managed forests.

When investing in microfinance activities, PFIs will apply the following items in addition to the IFC Exclusion List:

i. Production or activities involving harmful or exploitative forms of forced labor/harmful child labor.

ii. Production, trade, storage, or transport of significant volumes of hazardous chemicals, or commercial scale usage of hazardous chemicals. Hazardous chemicals include gasoline, kerosene, and other petroleum products.

iii. Production or activities that impinge on the lands owned, or claimed under adjudication, by Indigenous or Tribal Peoples, without full documented consent of such peoples.

1.18 Comparison between GoB and WB Policies and Guidelines

After reviewing the laws of GoB and World Bank guidelines, it is necessary to identify the similarities and differences between those so that the more stringent requirements can be applied for the sub projects. In general OP 4.01 requirements are more comprehensive when compared with the requirements of Bangladesh legal system. Table 1.4 lists some key comparisons between GoB and World Bank policies and guidelines.

Table 1.4: Comparison between GOB and World Bank Policies and Guidelines as Applicable to IPFF Subprojects

Sl. No.	Criteria	Requirements as per GoB law	Requirements as per OP/BP 4.01
1	Type of Environmental Analysis	Project specific	Project specific, regional and sectoral
2	Basis for Categorization	Categorizations of industrial projects are done according to the list in Schedule-1 of the ECR, 1997. As per rule-7(2) of ECR, these categorizations are based on consideration of their site and impact on the environment. Non–industrial projects are reviewed on a case by case basis by the DoE for clearance.	Detailed screening criteria for all projects based on • Sensitivity of receiving environment • Nature and magnitude of potential impacts
3	EA Outputs	Since detailed rules and regulations for EA have not been prescribed, EA outputs are not specified. However, the industrial sector guidelines, the water sector guidelines and the road sector guidelines have specific EA output requirements, such as: • Baseline survey • IEE/EIA Report • Site clearance • Risk analysis and management • Analysis of alternatives	Environmental and Social Assessment (ESA) Report (This may consist of an Environmental and Social Impact Assessment for new activities, and/or an Environmental and Social Audit when investments support existing facilities and operations) Environmental and Social Management Plan / Remedial

Sl. No.	Criteria	Requirements as per GoB law	Requirements as per OP/BP 4.01
			Action Plan (if required) Resettlement Action Plan (if required) Tribal Peoples Development Plan (if required)
4	Public Consultation	No special mention is made for public consultation in BECA. Sectoral guidelines mentioned above have prescribed consultation.	Mandatory at the stage of: • At onset of ESA (TOR stage) for Category A subprojects • Preparation of ESA • Project appraisal • Project implementation and monitoring
5	Disclosure of Information	BECA makes no reference to disclosure. The Sectoral guidelines prescribe some provisions for disclosure	Mandatory prior to subproject approval: • Summary of project description and potential adverse impact • Summary of ESA report and conclusion , in Bangla, for local stakeholders • ESA report in full

2 SCREENING & SAFEGUARD ASPECTS

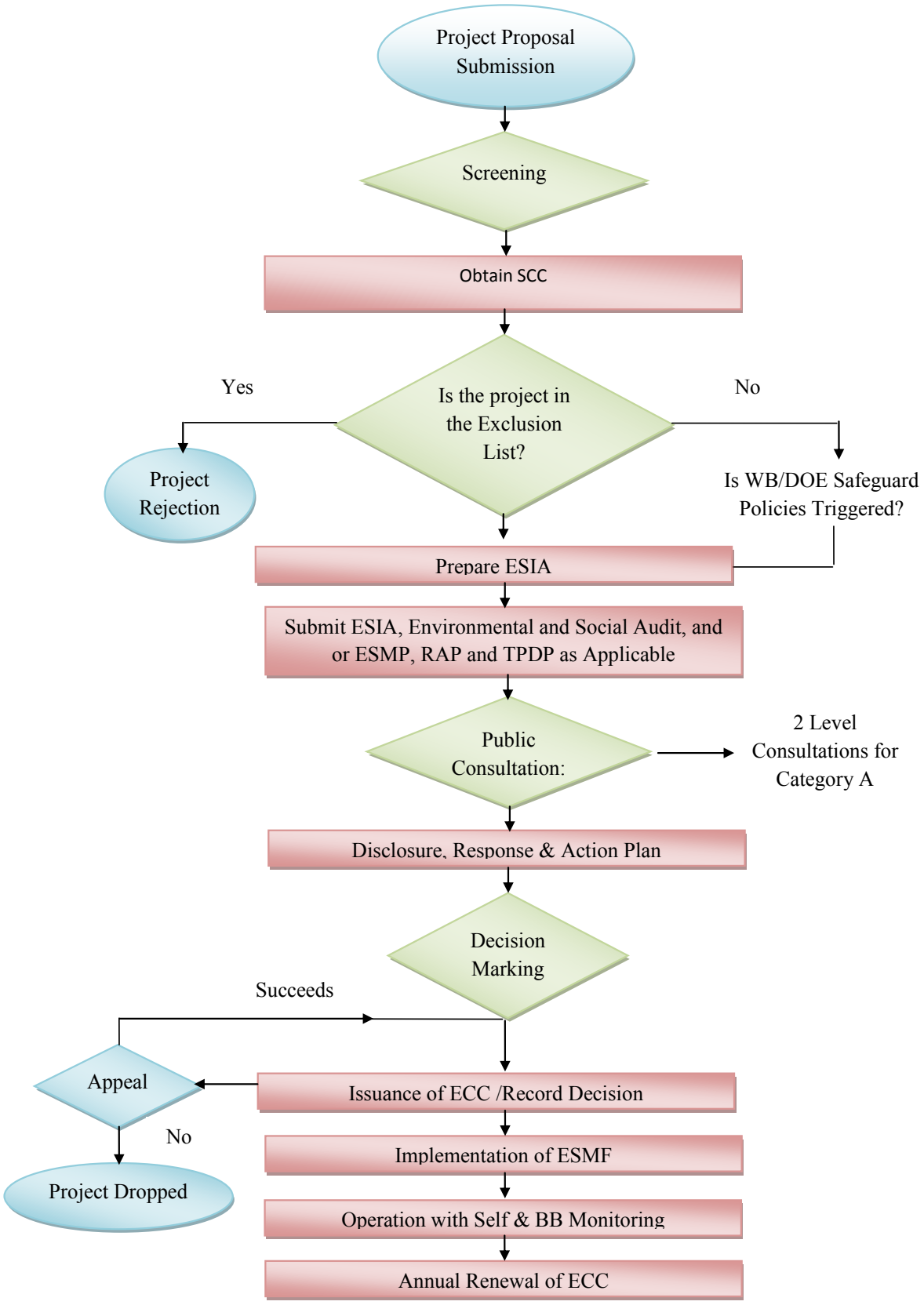
2.1 ESMF Aspects

Environmental and Social impact screening, mitigation and management measures development and implementation will follow these steps:

Step	Detail	Who responsible?
1	Identification of sub-projects according to the selection criteria	PFIs and IPFF Cell, in consultation with World Bank
2	Screening for potential environmental and social safeguard impacts and determination of safeguards documents required according to national regulations and World Bank policies	Subproject entrepreneur / private sponsor
3	Preparation of safeguard documents, consultation and disclosure	Subproject entrepreneur / private sponsor
4	Submission of environmental documents and getting site and environmental	Subproject entrepreneur / private sponsor
5	Review and clearance of the safeguard documents	PFIs, IPFF Cell. World Bank provides No Objection.
6	Implementation of agreed actions, monitoring & evaluation	Subproject entrepreneur / private sponsor
7	Renewal of annual environmental clearance	Subproject entrepreneur / private sponsor
8	Supervision and monitoring of implementation	PFIs, IPFF Cell World Bank

The overall environmental and social compliance processes and the steps involved in ECC by DoE for Red Category Projects are shown in Figure 2.1.

Figure 2-1: Environmental and Social Compliance Process



2.2 Environmental Screening

The screening process is the first step in the ESMF process. One of the objective of the screening process is to rapidly identify those Projects/Subprojects which have environmental and social issues so that they can move to implementation in accordance with pre-approved standards or codes of practices or other pre-approved guidelines for environmental and social management. The screening result will also be an important input for analyzing the „feasibility" of the project/sub-project along with engineering/economics and social criteria.

The major or key environmental issues to be identified will be determined by the type, location, sensitivity and scale of the sub-project. The results/findings from this exercise are/will be used to determine, primarily:

i. the environmental category of the project/sub-project.

the extent and type of Environmental and Social (Impact) Assessment requirement, and applicability of World Bank requirements on Involuntary Resettlement and Indigenous and Tribal Peoples.The screening parameters should be such that their identification and measurement are easy and do not involve detailed studies. The screening criteria, specified below, will also contain exclusion criteria, for sub-projects, which should not be taken up due to potential significant environmental impacts that cannot be mitigated (including, but not limited to, permanent obstruction to wildlife corridors or opening up increased access to threatened biodiversity resource hotspots or construction on top of eroded and vulnerable flood embankments).

Based on result of the environmental screening exercise, the type and scope of Environmental and Social Assessment that has to be undertaken by the subproject sponsor will be confirmed.

2.3 Preliminary & Detailed Screening

This step will involve an initial desk review of the available information about the Project and the Sub-project area. A preliminary environment and social screening format would be filled-up by the subproject sponsor and their environmental and social consultants (as applicable) who are responsible for carrying out IEE, EIA and other documents as required for GoB approvals – who in many cases will also prepare the ESIA or other required safeguard instruments as per World Bank requirements. For cases where the IPFF Cell"s ESA Consultant (Contracted by Bangladesh Bank) provides direct support to the sponsor for preparation of required ESA documents, screening would also be carried out by the ESA Consultant to confirm the appropriate scope of ESA.

The screening should use available information and field visits to understand the general overview in context of the scope of the proposed operation. The exercise will help in identifying the key/significant potential environmental impacts and in determining the project specific context and the focus required for carrying out the detailed environmental screening exercise. The completed screening sheet should also be shared with IPFF Project Cell to confirm its appropriateness prior to commissioning of more detailed ESA work.

The key sub-steps involved in the screening process are outlined below:

i. Ascertain presence of any environmentally and/or socially sensitive areas (as detailed in Screening Checklist) through primary/secondary information.
ii. Confirm applicability of regulations and policies in context of sub-project interventions.
iii. Conduct reconnaissance site visits for ground truthing and incorporate required/ additional information in the screening format.
iv. Obtain details about land availability and status of ownership (forest/govt./private).
v. Preparation of a screening report.

To ensure well targeted field assessment during the screening process, a sample checklist is provided in Annex B for collecting information on environmental, natural, biological, and physical and socio economic conditions, without which it becomes cumbersome to determine the likely potential impacts that may result from the project interventions. The process enables proper targeting of issues requiring further technical research and in-depth assessments during the ESA preparation.

Key outputs of the detailed environmental screening would include:

i. determination (with a degree of confidence), of all national and local regulations and policies that will apply to the sub-projects.
ii. preliminary judgment on the sub-project category.
iii. decision on the environmental categorization (A, B, or C) in line with World Bank"s Safeguards Policies
iv. determination of applicable ESA / safeguard instruments to prepare process, timeframe and responsibilities for securing the requisite clearances and permissions.

The screening results will be cross-checked with national regulations, in order to determine the applicable ESA instrument and other applicable safeguard documentation requirements.

The possible instruments required under national legislation are presented earlier specified under World Bank requirements are the following:

Table: 2.1: Potential World Bank Safeguard Instruments

Potential required national instruments	Potential required World Bank safeguard instruments
• Project Description • Initial Environmental Examination (IEE) • Environmental Impact Assessment	• Environmental and Social Impact Assessment (ESIA) • Environmental and Social Audit[1] • Environmental and Social

[1] Environmental and Social Audit will be required for expansion, retrofitting and re-financing project in addition to the project ESIA.

Potential required national instruments	Potential required World Bank safeguard instruments
(EIA) • Process flow diagram, layout plan, waste discharge, treatment and disposal arrangement, etc. • NOC from local authority • Land ownership/ rental deed, if applicable • Rehabilitation Action Plan (RAP), if applicable • Feasibility Report • Pollution Abatement Plan and emergency Plan	Management Plan (ESMP) • Resettlement Action Plan (RAP) • Tribal Peoples‟ Development Plan (TPDP)

2.4 Screening Category

The Infrastructure Projects may be classified as Category A or Category B, in par with WB Categorizations, depending up on the nature, location specificity and environmental impact of the project. To assist in categorization, Table 3.2 below outlines typical Threshold Limits between Category A and B. However, it is important to note that the Threshold Limits provided are guidance only and must be confirmed on a case-by-case basis, given that World Bank categorization depends not only on the potential magnitude of the impacts but also on the environmental and/or social sensitivity of the receiving environment. In other words, projects which may otherwise be considered as Category B Project based on their scale may be considered Category A if the proposed Project Site is in the area of influence of an Ecologically Critical Area as declared by DoE, or otherwise is considered sensitive. Complex social impacts may also warrant an A categorization, even for projects which may otherwise be considered Category B. In a similar fashion, projects to be developed inside an existing EPZ or SEZ, or otherwise in an area pre-zoned for industry, are more likely to be considered Category B than projects in other settings (although this also needs to be confirmed on a case by case basis)- The WB Safeguard Policies triggered by the Projects are given in Table 2.2.

Table 2.2: Infrastructure Projects Categorization (for guidance only)

Project or Activity	Category with threshold limit	
	Category A	Category B
Thermal Power Plants	≥100 MW new construction or added capacity (coal/lignite/naphta & gas based); ≥50 MW new construction or added	<100 MW new construction or added capacity (coal/lignite/naptha & gas based); <50 MW (Pet coke, HFO, diesel and all other fuels)

Project or Activity	Category with threshold limit	
	Category A	Category B
	capacity (Pet coke, HFO, diesel and all other fuels)	
Airports	All new airports, or expansion of existing airports when new land acquisition will lead to significant human displacement and/or conversion of sensitive natural habitat	- Minor expansions to existing airports, when additional land acquisition required will not result in significant human displacement and/or conversion of sensitive natural habitat. Most upgrading activities inside the footprint of an existing airport
Industrial estates/ parks/ export processing Zones (EPZs), Special Economic Zones (SEZs), etc.	Development of new Industrial Estates, and/or expansions of existing estates when new land acquisition will lead to significant human displacement and/or conversion of sensitive natural habitat	- Minor expansions to existing industrial estates, when additional land acquisition required will not result in significant human displacement and/or conversion of sensitive natural habitat. - Most upgrading activities inside the footprint of an EPZ or SEZ (unless falling into category below)
Common hazardous waste treatment, storage and disposal facilities (TSDFs)	All facilities	
Ports & Harbours (sea, river and land)	≥ 1 million TPA of cargo handling capacity	<1 million TPA of cargo handling capacity
Highways	i) New National Highways; and ii) Expansion of National Highways >10 km, involving additional right of way greater than 20 m & involving land acquisition.	New or Expansion of National High ways <10 km, involving additional right of way greater than 20 m, involving land acquisition
Central Effluent Treatment Plants (CETPs)	All projects	-
Central Municipal Solid Waste Management Facility (CMSWMF)	All projects	-

Table 2.3: Safeguard Policies Triggered by IPFF project

Sl. No.	WB Safeguard Policy	Yes	No
1	Environmental Assessment (OP/BP 4.01)	X	
2	Natural Habitats (OP/BP 4.04)		X
3	Forests (OP/BP 4.36)		X
4	Pest Management (OP 4.09)		X
5	Physical Cultural Resources (OP/BP 4.11)	X	
6	Involuntary Resettlement (OP/BP 4.12)	X	
7	Indigenous Peoples (OP/BP 4.10)	X	
8	Safety of Dams (OP/BP 4.37)		X
9	International Waterways (OP/BP 7.50)	X	
10	Disputed Areas (OP/BP 7.60)		X

Of the Operational Policies, Safeguard policies relating to Natural Habitats, Forests, Pest Management, Indigenous Peoples, International Waterways, Safety of Dams and Disputed areas are not considered applicable to the project. However, the screening of each subproject should confirm this on a case by case basis. In the event that screening shows that any of these policies is in fact applicable, the ESA instrument(s) developed for the subproject should include appropriate measures to ensure compliance. For the policies shown as triggered in the table above, their applicability to any given subproject must likewise be confirmed based on subproject-level screening

2.5 Screening Methodology

Observations during preliminary field visits, desk study and results from the screening exercise will identify potential impacts, which could range from immediate to long term, could be direct or indirect including induced development, reversible or irreversible, and or cumulative as a result of interaction with other development activities ongoing in the region.

A format, as given in Table 2.4, may be adopted to tabulate the result of the environmental screening exercise. It will provide the inputs for the „feasibility study" and will give direction to the „scoping exercise" for the applicable safeguards instruments.

Table 2.4: Environmental and Social Screening of project area

a) Physical Environment:

Sl. No.	Environmental Attribute	Grading		
		High	Medium	Low
1	Topography			
2	Drainage Conditions			
3	Vulnerability to natural hazards			
4	Proximity to surface water resources			
5	Potential impacts to ground water resources			
6	Soil Erosion potential			

b) Biological Environment:

Sl. No.	Environmental Attribute	Grading		
		High	Medium	Low
1	Proximity to Designated Protected Areas			
2	Proximity to Wildlife habitat/s			
3	Proximity to Migratory route/crossing of wild animals and birds			
4	Proximity to Reserved/Protected Forests			
5	Proximity to Green tunnels/Avenue Trees			

c) Socio-economic Environment:

Sl. No.	Environmental Attribute	Grade		
		High	Medium	Low
1	Proximity to Settlements			
2	Proximity to Sensitive Receptors			
3	Proximity to Drinking water sources			
4	Proximity to Religious Structures			
5	Proximity to Cultural Properties			
6	Proximity to Market Places			
7	Proximity to Common Property Resources			

2.6 Determination of Required Safeguard Documents

The safeguards documentation requirements for each sub-project will be determined based on the screening procedures, as follows:

Table 2.5: Determination of Required Safeguard Documents

Project Category	Safeguard Documents	
	New construction	**Expansion, retrofit or refinancing of existing facility**
Category A*	Full Environmental and Social Impact Assessment (ESIA), including Environmental and Social Management Plan (ESMP) Resettlement Action Plan (RAP), if physical or economic displacement will result from land acquisition Tribal Peoples‟ Development Plan (TPDP), if subproject will affect tribal peoples	Environmental and Social Audit of existing facility operations Environmental and Social Impact Assessment (ESIA) for expansion component Environmental and Social Management Plan (ESMP), including remedial actions if required based on audit findings, as well as management measures for new construction/retrofit as well as ongoing operations Resettlement Action Plan (RAP), if physical or economic displacement will result from land acquisition associated with expansion Tribal Peoples‟ Development Plan (TPDP), if subproject will affect tribal peoples
Category B	Simplified ESIA / EIA (if required by national regulations) ESMP consisting, at a minimum, of standard environmental codes of practice and supplemented, if necessary, with additional analysis and site-specific mitigation measures Resettlement Action Plan (RAP), if physical or economic displacement will result from land acquisition associated with expansion	Environmental and Social Audit of existing facility operations Simplified ESIA / EIA for expansion component (if required by national regulations) ESMP consisting, at a minimum, of standard environmental codes of practice and supplemented, if necessary, with additional analysis and site-specific mitigation measures for construction /retrofit activities, remedial actions if required based on audit findings, and management measures for ongoing operations

Project Category	Safeguard Documents	
	New construction	Expansion, retrofit or refinancing of existing facility
	Tribal Peoples‟ Development Plan (TPDP), if subproject will affect tribal peoples	Resettlement Action Plan (RAP), if physical or economic displacement will result from land acquisition associated with expansion Tribal Peoples‟ Development Plan (TPDP), if subproject will affect tribal peoples
Category C	Sub-projects that are rated Category C do not require separate safeguards documents, but will comply with the regulatory requirement for registration.	Sub-projects that are rated Category C do not require separate safeguards documents, but will comply with the regulatory requirement for registration.

*In particular for category A projects, the Sub-borrower (project sponsor) will consult with IPFF Project Cell and the World Bank during preparation of all safeguards documents. All safeguards documents will be submitted to the World Bank for review and No Objection prior to approval of the loan application.

2.7 Social Safeguards Screening

Every sub-project will be screened by the sub-borrower for social impacts, including:

i. the need, if any, for land acquisition and involuntary resettlement (permanent or temporary);
i. the impacts on the population to be affected; and,
ii. whether there is minority tribal community that would be affected by the sub-project (as determined through a review the demographic information in the sub-project areas).

In addition to any requirements to meet World Bank policies, the Sub-borrower will also screen the sub-projects for national laws and regulations regarding land acquisition and involuntary resettlement.

2.8 Social Safeguards Documents

The Social Safeguards documents depend on the sub-project„s impacts as follows:

i. A Resettlement Action Plan (RAP) is required if the project will result in physical or economic displacement of over 200 people. If fewer people need to be resettled, then an abbreviated RAP will be required, including compensation for land already acquired if applicable. The RAP should be based on a social assessment (SA).
ii. A Tribal Peoples‟ Development Plan (TPDP) is required if the project will

affect any tribal peoples, or if it takes place on the ancestral lands claimed by tribal peoples. The TPDP should be based on a tailored Social Assessment and a process of Free, Prior, Informed Consultation (FPIC) with the affected tribal peoples.

2.9 Safeguards Documents including Consultation and Disclosure

Once the screening and documentation requirements are agreed by the Bank and confirmed by the IPFF/BB, except in the case of Environmental and Social Audits, the Sub-Borrowers will develop detailed safeguard documents and impact mitigation measures as required by this ESMF, and to obtain the environmental clearances for each sub-project before starting the construction. Sound environmental practices have to be incorporated into the sub-project design and implementation and potential negative impacts will have to be mitigated to acceptable levels / standards. The Sub-Borrowers are responsible for the quality and accuracy of the information in the EA document, as well as public consultation and disclosure of the documents and transmission of final versions to IPFF/BB.

The IPFF Project Cell may also decide, on a case by case basis, to contract out the required assessments and development of applicable safeguard documents on behalf of the Sub-Borrower. In such cases, the Sub-Borrower is responsible to make all relevant information available to the IPFF Project Cell in order to carry out proper assessments, and to ensure the quality and accuracy of information presented.

Audits of existing facility operations, when applicable, will always be contracted out by the IPFF Project Cell, so as to ensure their independence.

The Sub-Borrower is responsible in all cases for obtaining all necessary environmental clearances and other applicable national requirements. To the extent possible, the preparation of required safeguard documents as per this ESMF should be done in conjunction with preparation of comparable documents required for national regulatory compliance (e.g., EIA, EMP, land acquisition and resettlement plan, etc.). However, in cases where the safeguard instruments are being prepared by the IPFF Project Cell, the Sub-Borrower is responsible for ensuring that the scope of work being undertaken is adequate in scope to obtain such applicable national environmental clearances and meet other legal requirements, or supplementing the work of the IPFF if and when required in order to meet all such legal requirements.

Safeguard documents will be subject to consultation and disclosure in an accessible place, in a timely manner, in a form and language understandable to key stakeholders, prior to the finalization of the documents. Particular attention will be given to ensure project-affected persons have adequate time and ready access to draft documents before consultation takes place.

Consultation for Category A projects and projects that require RAPs will be undertaken as required to understand the concerns of affected communities/people, explain impacts and entitlements, garner feedback regarding mitigation measures and ensure that these have been considered and incorporated where appropriate in the finalized documents. Consultation and communication is an iterative process that should be followed throughout the SIA and RAP preparation, implementation and monitoring and evaluation phases.

Information to be disclosed will include, at a minimum: sub-project design, impacts, entitlement matrix, proposed mitigation and management measures, grievance redress procedures and implementation arrangements. Information on how to get in touch with the Sub-Borrower in case of any grievances should also be disclosed. During the design and implementation phases, this information will be updated and continually made available to stakeholders.

Disclosure means could vary, but may include posters, booklets, newspapers, the internet, and community meetings. All safeguard documents will be disclosed at a public place accessible to affected groups and other stakeholders prior to consultation to establish the basis for meaningful consultation. Disclosure should be done in a culturally appropriate form and language. At minimum, the Executive Summary of the ESA document, RAP and TPDP (as applicable) should be available in Bangla, in locally accessible locations to project-affected peoples. Disclosure and consultation mechanisms will be planned and detailed in the relevant safeguard documents.

In view of the World Bank„s Access to information Policy and Open Data Initiative, the Borrower and Sub-Borrowers will allow disclosure of information regarding environment and social safeguards by the World Bank.

Grievance Redress: A grievance redress mechanism for the project is necessary for addressing legitimate concerns of affected individuals and groups who may consider themselves deprived of appropriate treatment under the project. The Sub-Borrower„s mechanism would include: (a) a recording and reporting system, including grievances filed both verbally and in writing; (b) designated staff with responsibility at various levels; and (c) a time frame to address the filed grievances. This mechanism will be detailed in the sub-project safeguards documents, and must be disclosed to stakeholders. The functioning of the grievance redress mechanism will be regularly monitored and evaluated by the Borrower during project implementation.

Rapid response to Disasters and other Crisis: An emergency and disaster management plan should be included in each subproject‟s ESMP to outline the measures required in the event that a natural disaster or a crisis occurs, to address the significant environmental, health and safety issues that may be encountered The immediate steps to be taken to address the environmental, health and safety impacts generated by the project during natural disasters should be part of the mitigating measures identified in the Emergency Management Plan, as part of the subproject‟s overall Environmental and Social Management Plan. The emergency plan should also specify measures to immediately bring back the treatment facilities back to working condition. The actions taken should be included in the Environmental Compliance report and the self-monitoring report that will submitted by the Sub-Borrower to the BB and the WB.

2.10 Review and Clearance of Safeguards Documents

Review by Bangladesh Bank: Review of the environmental and social safeguards documents, according to national regulations and World Bank requirements, is the responsibility of Bangladesh Bank‟s IPFF Project Cell. Safeguards documents are also to be cleared by the WB. In line with its environmental credit policy, Bangladesh Bank will also monitor the Sub-Borrower„s compliance with the WB safeguard policies.

World Bank Review: The requirements for review and clearance of safeguards aspects of IPFF investments by the World Bank are as follows:

Category A: The ESIA, Environmental and Social Audit (if applicable), ESMP and other relevant safeguards documents for all Category A sub-projects will be subject to World Bank standard review and clearance procedures prior to approval of the sub-project. The World Bank will also conduct periodic supervision of such investments during implementation.

Category B: The Simplified ESIA, Environmental and Social Audit (if applicable), ESMP and other relevant safeguards documents for Category B sub-projects will be subject to selective World Bank review and clearance prior to approval of the sub-project. In addition, these documents, as well as the projects themselves, will be subject to review on a selective basis during supervision missions.

Category C: No safeguards related review required by the World Bank, except for confirmation of appropriate categorization at the screening stage.

2.11 Implementation & Supervisions, Monitoring and Evaluation

Implementation: Implementation of the safeguards measures during sub-project implementation is the responsibility of the Sub-Borrowers (e.g., subproject sponsors). All costs associated with the ESA process (including but not limited to costs to carry out public consultation, consultant fees and field expenses to conduct necessary studies, as well as administrative fees for filing and processing fee of IEE and EIA report) and cost of environmental monitoring are ultimately the responsibility of the Sub-Borrower. The Sub-Borrower should put up its own funds for EA / ECC processing since the loan does not finance any processing fee and cost associated with review.

Supervision: The Sub-Borrowers will be responsible for the implementation of the EMP/ SMP/RAP/TPDP and social safeguard-related actions approved by the government and the Bank. The World Bank task team will regularly visit the sub-project areas throughout project implementation in order to supervise the implementation of the safeguards instruments to ensure they are implemented in compliance with the Bank policy requirements.

Monitoring and Evaluation: Sub-projects are required to conduct regular self-monitoring of parameters indicated in the sub-project„s ESMP (including Remedial Action Plan, if required based on findings of an Environmental and Social Audit of an existing facility). The primary purpose of compliance monitoring is to ensure the implementation of sound and standard environmental procedures as defined during the project preparation.

Specifically, it aims to:

- monitor project compliance with the conditions set in the ECC and all applicable laws, rules and regulations;
- monitor compliance with the ESMP, RAP, and TPDP; and
- provide a basis for timely decision-making and effective planning and management of environmental and social measures through the monitoring of actual project impacts *vis-a-vis* the predicted impacts in the ESIA / IEE.

2.12 Example Table of Contents of an ESIA Report

The table of contents/presentation structure of the Environmental and Social Impact Assessment (ESIA) has been mentioned below:

Table 2.6: Example Table of Contents of an ESIA Report

Ch. No.	Chapter & Description
	Table of Contents
	Executive Summary
1.0	**Introduction** i. Project Description (e.g., definition of project and its associated activities including its location, proposed start and end points, regional setting, scale and size) ii. Project Proponent iii. Definition of the project‟s area of influence (direct and indirect)Expected benefits Various studies/reports being prepared for the subproject and how the environment screening study relates to/feeds into the over-all subproject preparation
2.0	**Methodology Adopted for Environmental and Social Assessment Exercise** i. Types and sources of data collection ii. Weight age/ranking system used iii. Data gaps/constraints, if any iv. Structure of the Environment Screening Report
3.0	**Regulatory and Institutional Regime** i. Environmental policies and their implications/application in the sub-project context ii. Environmental acts and their implications/application in the sub-project context iii. Environmental categorization (as per DoE as well as WB requirements) iv. Inter-national/national conventions and their implications/application

Ch. No.	Chapter & Description
	in the sub-project context v. Environmental permits/approvals that will be required for the sub-project (include specific local requirements, if any) **vi.** Existing institutional arrangements/set-up (both in terms of environmental regulatory agencies and project proponent set-up)
4.0	**Baseline Environmental Conditions (for entire Area of Influence)**
4.1	**Natural Environment** i. Over-all environmental setting of the project (including geographic location and topography) ii. Natural resources present in project area of influence iii. Natural hazards and vulnerability of the sub-project area iv. Air Quality v. Water availability and quality (include both surface and ground water sources) vi. Drainage conditions/issues vii. Slope stability (soil type/s; erosion; landslide/landslip problems, if any) viii. Visual resources (if any)
4.2	**Biological Environment (terrestrial and aquatic, as applicable)** i. Protected Natural Habitats ii. (Biosphere Reserves; National Parks and Sanctuaries) iii. Wildlife Habitats (outside designated protected areas) (including bird habitats, aquatic habitats, as relevant) – including both critical habitats and non-critical habitats, as applicable (see World Bank OP 4.04) iv. Presence of Forest (Reserved, Protected or of any other category) v. Flora/vegetation and fauna (general) vi. (include a broad estimate of trees (no. and type) that may get affected) vii. Presence of vulnerable, threatened and/or endangered species of flora and fauna, if any
4.3	**Physical and Socio-economic Environment** i. Land-use and land tenure Socio-economic baseline: characteristics of the project influence area (including population demographics, education, income expenditure data, transportation network; other infrastructure and services; existing economic/ employment base) ii. Cultural resources (archeological heritage; religious structures; local built heritage and art forms, any intangible cultural resources) iii. Health and Safety (baseline conditions and key risks) iv. Presence of sensitive receptors such as adjacent settlements, schools/colleges/health centers/hospitals v. Local level features and issues (features such as presence of mandis/markets/haats or pastures and issues like noise, vibration,

Ch. No.	Chapter & Description
	congestion, waste dumping along the road, presence of contaminated sites) vi. Presence of any tribal groups / communities
5.0	**Assessment of Key Environmental Impacts and identification of mitigation measures** i. Link-up existing environmental conditions with proposed subproject intervention/s (including any associated facilities) and identify/assess the potential direct, indirect, induced and cumulative environmental issues/impacts on natural, biological, physical and socioeconomic or cultural attributes that may result from subproject development. ii. Score the identified impacts based on their likelihood/frequency and potential magnitude vis-à-vis the identified receptors or attributes, in order to determine overall significance of each impact iii. Identify the key risks associated with the subproject purely on account of the proposed intervention/s (such as health and safety risks for workers and communities, disaster vulnerability, etc) iv. Analyze/propose alternative options for project siting and design, as well as the "without project" scenario v. Identify necessary mitigation measures in order to achieve the following (according to the mitigation hierarchy as presented): a. Avoid identified impacts b. Reduce or minimize the significance of unavoidable impacts and risks c. Mitigate remaining impacts once minimizing measures have been put in place d. Compensate for, or offset, any remaining residual impact, once (a) – (c) have been completed
6.0	**Stakeholder Consultation** i. Definition of stakeholders, including identification of any vulnerable groups requiring more targeted consultation methods (women, elderly, illiterate populations, etc.) ii. Types/categories of stakeholders consulted for the Feasibility/Screening studies iii. Details about the consultations carried out iv. Provide summary in the chapter and supporting details in the annex, including photos and names/occupations/area of residence of those consulted (as much information as can be collected), as well as methods of publicity v. In the summary, kindly mention when, where, how many people attended, key topics discussed and information shared. vi. Clearly list out findings including areas/issues that are of concern to the stakeholders and need attention and how they have been taken into

Ch. No.	Chapter & Description
	account by the project.
7.0	**Grievance Redress** i. Grievance Redress Mechanism ii. Disclosure
8.0	**Emergency Response and Disaster Management Plan** i. Emergency response • Steps in Emergency Response • Reporting Incidents and Accidents • Approaches to Emergency Response ii. Disaster Management Plan iii. Environmental, Health and Safety (EHS) iv. Fire Hazard & Fire Evacuation Plan
9.0	**Environmental and Social Monitoring Program** i. Prepare environmental monitoring program including technical aspects, measurement methodologies, data analysis and reporting schedule; ii. Specify the program implementation schedule showing phasing and coordination with overall project implementation iii. Formulate frequency of sample collection procedure and custody chain; iv. Describe institutional or organizational arrangements, such as, who is responsible for carrying out the mitigation and monitoring measures including capital and recurring cost and describes the sources of fund.
10.0	**Environmental and Social Management Framework (ESMF)** i. Key issues/concerns identified ii. Describe each mitigation measure with technical details with designs, equipment descriptions and operating procedure as appropriate iii. Prepare detailed budget and procurement schedule of environmental related equipment and materials iv. Describe the desired outcomes as measurable events such as performance indicators (KPI), targets or acceptance criteria v. prepare plan to strengthen environmental management capability: technical assistance programs, training programs, procurement of equipment and supplies related to environmental management and monitoring, and organizational changes; vi. estimate the cost of implementation of EMP during construction phase and annual cost of EMP implementation during operation phase.
11.0	**Annexure/s** i. Names and contact details of key staff involved in the Environment and Social Assessment ii. Stakeholder consultation details iii. Details of the data collected
12	**References**

3 SPECIFIC GUIDANCE FOR COMPONENTS OF ESIA

3.1 Environmental and Social Impact Analysis

The ESIA describes possible adverse effects that the proposed subproject may pose to the environment. It recommends mitigation measures and how will they be implemented. The ESMP – either as an accompanying chapter of the ESIA, or as a stand-alone document when a full ESIA is not required (e.g., Category B projects which do not otherwise require an EIA under national legislation) – provides detail on how the recommended mitigation measures will be implemented and outlines requirements, institutional arrangements/responsibilities, timelines, estimated costs and sources of funds for management and monitoring of both positive and negative effects of the project.

The key environmental and social concerns in Bangladesh include the following and special care needs to be taken for preparing an ESIA and ESMP:

- Liquid effluents
- Ambient Air Pollution
- Surface water quality
- Solid and Hazardous Waste management
- Seasonal fluctuations in ground water table
- Noise pollution
- Groundwater quality
- Arsenic Contamination of Aquifers
- Traffic management
- Saline intrusion (coastal areas)
- Drainage
- River bank erosion
- Flooding
- Wetland deterioration
- Land degradation
- Indoor Air Pollution
- Forestry management
- Biodiversity conservation
- Fish and fisheries resource management
- Loss of land/ structures/assets/crops
- Displacement of people or economic / livelihood activities
- Impacts to tribal communities
- Impacts to physical cultural resources

It is important to consider not only the impacts on these key environmental and social concerns (often also referred to as “Valued Environmental Components” or VECs)

associated with the facility installations themselves, but also with the associated facilities and activities required for its construction and operation, including support infrastructure (roads, workers‟ camps, sources of power and water, waste management facilities, borrow and disposal areas, etc.).

The following table provides potential environmental and social impacts from different activities of a project:

Table 3.1: Potential Environmental and Social Impacts

Activity	Potential Impacts
Construction Workforce	Impacts during construction may include: • Tensions between outside workers and local communities • Affected living standard and income of local residents due to occupation of farmland/aquaculture land • Market distortion due to temporary inputs to local economy • Unemployment of local labor • Disruption to livelihoods, cultural activities, and wellbeing of locals • Competition for employment with locals.
Worker's Camp and Site Installation	Impacts during construction may include: • Generation of significant volumes of wastewater and solid waste • Stockpiling of waste and illegal dumping • Contamination of land, surface water and groundwater caused by spillage and leakage from storage of hazardous materials including petroleum products, chemicals, hazardous substances or hazardous wastes. • Water courses, nearby rice paddies, and agricultural/aquaculture land can be easily contaminated with wastewater and solid wastes.
Erosion and Sedimentation	Roadbed and side slopes digging, roadbed filling, road surface paving, bridge foundation treatment, materials stack, concrete plants, construction machinery operation etc. can: • Destroy surface vegetation • Aggravate soil erosion • Weakened soil conservation capacity • Temporarily change water flow patterns
Emissions and Dust (Air Quality)	Sources for air pollution during construction that can be a nuisance and cause health problems are: • Fugitive dust emissions due to exposure of slope surface, uncovered stockpiling area, earth moving and excavation activities • Dust emission due to blasting of rock • Dust from vehicles and unpaved roads • Wind blow during transportation of material by vehicles and when

Activity	Potential Impacts
	transporting on unpaved access roads • Gases emissions from batching plants and concrete mixing stations • Gases emissions during payment of road surface by asphalt plant; • Air pollutant emissions from exhaust of construction plant and vehicles such as CO, CO2, NOx, and SO2. Air pollution problems during the operation phase are: • Exhaust from vehicles (e.g. CO, NOx) that may deteriorate air quality in tunnel and at nearby sensitive receptor locations; and • Gases emissions during road maintenance and re-surfacing of road surface (e.g. asphalt plant).
Noise and Vibration	Disturbances to livelihoods and damage to structures can be cause by: • Operation of the various equipment during construction (air compressor, concrete mixers, powered mechanical equipment, bulldozers, excavators, etc); • Vehicles transporting materials within construction site and beyond the construction boundary; • Piling activities during construction of foundations / piers; • Ventilation systems during tunnel construction; • Blasting and vibration during tunnel construction • During the operation phase, noise may be generated by: • Traffic noise from road and horning of vehicles; • Noise from service areas and car parking areas; and • Construction plant during road maintenance.
Earthworks, Fill Slopes, Cuts, Borrow Pits, Quarries, Disposal sites, Stockpiles	Impacts include: • Loss of topsoil affecting productive land. • Land instability from incorrect earth removal or unstable deposition of spoil, leading to landslides or erosion events. • Discharge of sediments into watercourses, rice paddies, drainages, and irrigation canals. • Erosion of riverbanks, slopes, and productive land • Noise and vibration • Dust emissions affecting health. • Disturbances or damage to physical cultural resources. • Damage to agricultural land and native vegetation • Visual Impacts
Disposal of Debris, Demolition of	Impacts include: • Damage of local forest areas, contamination of drainage

Activity	Potential Impacts
Structures	watercourses and impacts on land by Improper disposition of Construction and vehicle waste • Injure of workers and the general population by falling debris and flying objects
Clearing of Construction Areas	Large-scale moving activities, disturbance of soil profile and removal of vegetation can result in: • Soil erosion and visual impact • Loss of productive plots / trees affecting livelihoods and habitat • Loss of habitat and vegetation for animals • Discharging sediment and vegetation material into water courses affecting in-stream habitat • Discharging sediment and vegetation material into rice paddies, and irrigation canals
Landscape, Visual Impacts and Site Restoration	Landscape and visual impacts during construction can result from: • Poor/inadequate aesthetic design and landscaping design of the proposed road structures • Poorly implemented temporary mitigation measures and slope protection measures during excavation and slope work. After the completion of construction and before operation of the project, landscape and visual impact may occur because of: • Lack of appropriate compensatory planting at the end of construction or non-native species • Planting of species visually incompatible to the background environment; • Lack of proper maintenance/watering of newly planted vegetation during the post-construction period. • Lack of proper restoration of cleared areas, such as borrow pits, stockpiles and disposal areas, construction camp areas, areas under bridges, and any areas occupied temporarily
Water Quality	Pollution of watercourses, groundwater, natural habitats and productive land caused by: • Wastewater generated from construction equipment; • Wastewater from bored piling locations; • Soil erosion / flush away from uncovered stockpiling locations, uncovered excavation site and unprotected slope surface during adverse weather conditions; • Uncontrolled surface water run-off carrying sediment laden discharges directly into natural water bodies such as streams, fish

Activity	Potential Impacts
	ponds, rivers and local irrigation channels; • Domestic sewage generated by construction workers, such as kitchen, shower, campsite, etc. Main water quality issues during operation phase are: • Wastewater generated; • Pollution of nearby water body due to toxic materials and • Wastewater discharge from service areas, car parking and toll station
Solid Waste, Hazardous and Chemical Waste	Damage to local forest areas, pollution of drainage watercourses and natural habitats, and impact on agricultural land caused by: • Surplus excavated materials requiring disposal; • Disposal of used wooden boards for trenching works, scaffolding steel material, site hoarding, packaging materials, containers of fuel, lubricant and paint; • Waste generated by demolition of existing houses / buildings affected by the project or breaking of existing concrete surface; • Domestic solid waste generated by construction workers, construction campsite, kitchen, toiletries, • Improper disposition of hazardous wastes such as waste oil, spent lubricant, solvents, and contaminated materials resulting from leakage of oil and fuel. • Improper handling and storage of hazardous and chemical substances and construction materials
Natural Water Course	• Discharges of sediment into water courses affecting in-stream habitat. • Erosion of river banks • Introduction of invasive species. • Changing water course paths blocking fish passage and affecting in-stream habitat from fallen debris from the construction process • Discharges of oil and fuel to water courses affecting water quality.
Ecological Considerations (Fauna and Flora)	Impacts during construction include: • Destruction of native vegetation and land outside proposed working areas • Damage of forest areas • Loss of habitat and vegetation for animals due to site clearance • Temporary destruction or disturbance of aquatic life due to bridge works • Land occupation at ecological sensitive areas • Damage of forests and waterways adjacent to camps and work areas.

Activity	Potential Impacts
	• Illegal hunting of wild animals by construction workers • Lack of re-construction of lost habitats and re-creation of diverse ecosystems. Impacts during operation phase include: • Traffic noise and lighting can force wildlife to leave their natural habitats • Lack of evaluation of the success of recreation of habitat and identification of further measures to improve ecological conditions • Traffic accidents with wildlife crossing
Construction Site Safety	Impacts include: • Risk associated with working in enclosed environment such as inadequate ventilation and fire fighting within tunnel / tunnel shaft • Seepage of water into tunnel during the tunnel construction; • Collapse within tunnel when drilling through geologically unstable ground layers • Risk of falling objects and unstable working platform • Risk associated with blasting and fire • Risk associated with equipment and traffic movements, on and off the construction sites.
Traffic Management	Impacts include: • Traffic congestion during construction due to the increase of heavy traffic; • degradation of local roads due to heavy equipment machinery and traffic detours; • Pedestrian safety specially for school children during construction; • Increase in traffic accidents
Community Relations	Lack of communication and consultation with local communities can lead to an opposition to a project, delays in the construction process increased costs and unsatisfactory solutions.
Health Issues	Impacts include: • Spread of disease due to poor housekeeping and accumulation of domestic waste within the construction site • Stagnant water may result in mosquitoes breeding. • Unsafe sex conduct could bring the HIV/AID risk to the local communities. • Illnesses brought by outside construction workers.

Cumulative Impacts: Cumulative impacts can be defined as impacts, which potentially develop from the combined impacts of more than one project or large scale

program occurring within the same area of influence and time span. In such cases, cumulative impacts will have to be assessed based on the combined effects of potential impacts from the various program inputs. The other projects or activities contributing to the cumulative impact may be outside of the purview of the subproject sponsor"s responsibility or influence; nonetheless, such impacts need to be identified in the subproject ESIA. The identification of cumulative effects may signal that the significance rating of a given project-related impact should be elevated and more careful management attention paid by the subproject sponsor.

The cumulative impacts of IPFF type subprojects are likely to fall along the following environmental parameters:

i. Change in land use
ii. Traffic
iii. Industrial wastewater effluent
iv. Solid waste disposal
v. Noise.

3.2 Environment and Social Management Plans

The Environmental and Social Management Plan (ESMP) clearly laid out: (a) the measures to be taken during both construction and operation phases of the project to eliminate or offset adverse environmental impacts, or reduce them to acceptable levels; (b) the actions needed to implement these measures; and (c) a monitoring plan to assess the effectiveness of the mitigation measures employed.

The following table provides generic examples of common mitigation measures for various identified impacts which would be found in a typical Environmental and Social Management Plan (ESMP). The table should be considered as generic guidance only; actual mitigations and management measures will need to be confirmed on a subproject basis as part of the ESIA process.

Table 3.2: Generic Example Mitigation Measures in ESMP

Issue	Key Principle / Mitigation Standard	Mitigation Measures
General Issues:		
Water supply affecting ecology or neighboring community water supply.	Camp to provide its own water supply that does not affect village water supply.	Any water supply sources should be located so that it does not adversely affect the villages supply. The intake of water from streams for water supplies should leave residual flows in the watercourses. Storage tanks should be used to buffer water supplies.
Wastewater	Wastewater to be	Sewerage disposal methods should be

Issue	Key Principle / Mitigation Standard	Mitigation Measures
discharges affecting water quality	treated prior to discharge.	designed to the standards outlined by the government
Solid waste polluting the environment and causing health hazards	No waste to be burnt or buried on site.	All solid wastes shall be removed from site and disposed of at a landfill.
General Construction Issues:		
Noise of machinery associated with construction activities	Noise must not unreasonably intrude on traditional village life.	Keep a current list of all noise producing machinery and noisy activities Operate machinery only during designated hours in agreement with local communities Adopt a complaint mechanism that will enable capturing and addressing issues upfront Work to be carried out in daylight, in typical working hours. Concrete batching plants and other noisy equipment to be located as far as practical from settlements
Dust generation from construction activities	Dust must not cause a hazard or nuisance to village life.	Dusty operations to occur only during designated hours. Adopt complaint mechanism Concrete batching plants and other dusty equipment to be located as far as practical from settlements.
Vibration disturbance from construction activities	Vibration must not unreasonably intrude on traditional village life.	Keeps a list of all vibration producing machinery and activities causing vibration. This machinery operation to occur only during designated hours (to be confirmed by contractor in agreement with villages). Use of complaints register and procedures to address issues as they arise.

Issue	Key Principle / Mitigation Standard	Mitigation Measures
Increased utilization of roads by traffic associated with construction activities	There should be no significant increased risk to local populations from traffic associated with the development.	Road upgrades, including signage, speed humps, re-grading. Training of locals regarding the hazards of traffic. Training of vehicle drivers regarding the driving risks through villages and along remote roads. Use of complaints register and procedures to address issues as they arise.
Pollution risk activities occurring on site	Develop appropriate storage, transport and use practices for storage and handling of mixed classes of dangerous goods in packages and intermediate bulk containers. There shall be no solid or liquid waste disposal directly or indirectly to any water course (whether flowing or not).	Keeps a current list of all potentially contaminating materials used on site. Develop and implement appropriate storage, transport and use practices to recognized standards. Solid waste disposal shall be taken off site.
Excavation and Blasting:		
Noise disturbance of local populations	Noise must not unreasonably intrude on traditional village life.	Keep lists of all noise producing equipment. This machinery operation to occur only during designated hours (to be confirmed by contractor in agreement with villages). Blasting to occur at the same time each day, and / or a warning siren should sound prior to blasting.

Issue	Key Principle / Mitigation Standard	Mitigation Measures
Vibration disturbance of local populations	Vibration must not unreasonably intrude on traditional village life.	Keep current lists of all vibration producing machinery This machinery operation to occur only during designated hours (to be confirmed by contractor in agreement with villages). Blasting to occur at the same time each day, and / or a warning siren should sound prior to blasting.
Material Stockpiling:		
Runoff of suspended sediments from stockpiles	Stockpiling activities should not give rise to storm water containing elevated suspended solids. Provide treatment to achieve 75% reduction in suspended solids.	No direct discharge of sediment laden water without treatment. Stockpiles should be compacted as much as practical and not be exposed for extended periods. Storm water should be diverted around stockpiles.
Dust generation from stockpiles	Dust must not cause a hazard or nuisance to village life.	Stockpiles should be compacted and not exposed for extended periods. Stockpiles should be reused as soon as practicable.
Soil / Overburden Removal and Placement:		
Generation of suspended solids from bare ground and runoff into watercourses	Development activities should not give rise to storm water containing elevated suspended solids. Provide treatment to achieve 75% reduction in suspended solids.	No direct discharge of sediment laden water without treatment. Earthworks and land clearance should be minimized and phased. Any discharges to watercourses should occur during high flow and / or discharged as close to the outfall as possible to maximize mixing. Stockpiling should occur at least 10m from a water course. Re-vegetation of exposed areas as soon as practicable. Timing of works around the drier seasons where possible. Provision of storm water cut off drains wherever possible.
Introduction of invasive species	Fill material should not contain invasive	The use of imported fill shall be minimized.

Issue	Key Principle / Mitigation Standard	Mitigation Measures
	species.	Machinery should be cleaned prior to working on site to reduce the opportunity of the spread of weed seeds.
Disturbance of natural habitats for spoil / alluvial material.	Soils should be reused where possible in the development – to reduce the need for spoil sites and the need to import fill.	Stockpile and reuse soils before excavating new soils / alluvium.
Efficiency of control measures over time	Control measures should continue to work appropriately throughout the construction period.	Earthworks control measures should be inspected and maintained in efficient operating condition over the construction period.
Concrete Manufacture:		
Contaminants in water discharged from concrete manufacturing, including rise in pH.	No direct discharges of concrete batching water to any water course. Provide treatment prior to discharge to achieve 75% reduction in suspended solids.	Settlement ponds and / or sediment infiltration gallery. Monitoring immediately upstream and 50m downstream of the discharge with a clarity tube to estimate any effects on clarity; for pH to detect alkali discharges. Any storm water discharges to watercourses should occur during high flow and / or discharged as close to the outfall as possible to maximize mixing. Water to be reused where possible in the process. Procedures for handling of un-hydrated cement material and wet cement to avoid spills.
Community nuisances.	Noise and dust must not unreasonably intrude on traditional village life.	Concrete batching plants and other noisy / dusty equipment to be located as far as practical from villages.
Fuel Storage and Use:		
Pollution risk associated with the storage and use of fuels for all plant, generators and vehicles	No oil, lubricants, fuels or containers should be drained or dumped to ground or waterways. Accidental spills shall be minimized, and	Keep a current list of all fuels stored on site. Keep the Safety Data Sheet of all hazardous materials used on site. Develop appropriate storage, transport and use practices to recognized standards. Diesel to be stored in truck tankers or in

Issue	Key Principle / Mitigation Standard	Mitigation Measures
	procedures put in place to clean up the environmental damage.	overhead tanks to a maximum of 5000 liters. Diesel to be stored on flat ground, and 100m from a waterway. Dikes to capture 100% of fuel must be placed around fuel storage areas. All refueling of vehicles and plant to be done on flat ground. All significant vehicle and plant maintenance shall be undertaken offsite where possible. Spill kits and emergency procedures should be used and staff trained. There shall be no deliberate discharge of oil, diesel, petrol or other hazardous materials to the surrounding soils and waterways.
Works in and near Rivers:		
Sediment discharges arising from working in and near the river. For blasting in or near the river, refer to the blasting issues, above.	Work in the wetted area of the riverbed should be minimized, and only in relation to the construction of the power house, weir and intake structure or to insert culverts for stream crossings.	Stabilize works at the end of each working day and prior to storm events. Do the work during low flow periods. Works shall be minimized. Diversion of the river around the work area where possible.
Village impacts:		
Key Considerations for a Communication Strategy to avoid deterioration of current quality of life and traditional livelihoods	Communication channels are established between Villagers, Construction Supervisors, and state PCUs to facilitate information flow and easier process for lodging complaints	Set up a communication network for discussing issues between Construction supervisors Contractors and the villagers and the state PCUs built on recognized negotiation structures Construction Supervision Consultant and the Contractors will have an Environmental Specialist on site to ensure daily conformance with environmental health and safety guidelines and to respond to complaints A Health Program to be included in the Contractor‟s Construction and Workers Camp Management Plan. This will be

Issue	Key Principle / Mitigation Standard	Mitigation Measures
		made available to the communities Education and orientation of outside workers to local culture and social norms before the start of work. Camps to be self sufficient in resources and services. (refer to the workers camp table below) Villagers shall be adequately informed of all potential hazards to health and safety with regards to increased traffic, blasting, machinery operation.
Traffic causing safety risks to road users	Construction traffic will be managed to minimize the impact on existing road users.	Signage to be used to identify current risks to road users. Construction Supervision consultancy and Contractors to discuss major traffic issues with village representatives prior to the event to discuss course of action. Heavy traffic to avoid the hours when school children walk to and from school.
Sediment affecting river water uses.	Sediment discharges to the river shall be minimized.	Refer to the sections above discussing erosion and sediment control.

The table below provides another example of how an ESMP typically would present the association between project activities, their impacts, the specified mitigation measures, institutional arrangements and costs for their implementation.

Table 3.3: Example ESMP Responsibilities and Costs

Project Activity	Potential Impacts	Proposed Mitigation Measures	Institutional Responsibility	Estimated Costs (Example Only)
Use of land within power plant construction area, along gas pipeline route, and along the transmission line route	Damage to vegetation	Appropriate clearing techniques (hand clearing, not mechanized clearing) will be utilized. Any trees of protected species will be relocated. In case relocation is not possible, the project developer will pay a special fee to the local	Contractor/ Plant Operating Company	US$ 10,000

Project Activity	Potential Impacts	Proposed Mitigation Measures	Institutional Responsibility	Estimated Costs (Example Only)
		environmental fund.		
Use of land within power plant construction area, along gas pipeline route, and along the transmission line route	Loss of fertile topsoil and soil erosion	Fertile topsoil will be removed, stored in an isolated area away from construction activities, and covered with plastic to prevent runoff/erosion. Upon construction completion, topsoil will be returned and the area revegetated with plants similar to the original vegetation/native to the area.	Contractor/ Plant Operating Company	US$ 20,000
Construction works	Air pollution by dust	When necessary, construction site will be sprayed with water, particularly during hot, dry, windy conditions.	Contractor/ Plant Operating Company	US$ 2000
Construction works	Noise from construction works	Construction will be confined to normal work-hours (8AM to 6PM). If construction must be conducted before/after these hours, local public will be notified at least one week in advance.	Contractor/ Plant Operating Company	-

The following table meanwhile provides an example for a Monitoring Plan, which is another critical component of the ESMP:

Table 3.4: Example of ESMP Monitoring Plan (Construction Phase)

Potential Environmental Impacts	*What* parameter is to be monitored?	*Where* is the parameter to be monitored?	*How* is the parameter to be monitored?	*When* is the parameter to be monitored?
Damage to vegetation	Clearing techniques and relocation procedures utilized; record of fees to environmental fund	Power plant site, pipeline and transmission line routes	Visual and by comparison with pre-construction photo survey	Monthly throughout construction period
Loss of fertile topsoil and soil erosion	Soil storage procedures and location	Soil storage sites	Visual	Weekly during site preparation and construction period
Air pollution by dust	Dust level	All active construction sites	Visual	During construction
Noise from construction works	Noise level, dB[A]	All active construction sites	Measurements by a licensed organization using certified measurement devices	During construction

3.3 Project Specific Example of ESMP

Gas Fired Power Generation Project:

Environmental management and monitoring activities for gas fired power plant project could be divided into management and monitoring: (a) during construction phase, and (b) during operation phase.

The environmental management during the construction phase should primarily be focused on addressing the possible negative impacts arising from: (a) Generation and disposal of sewage, solid waste and construction waste, (b) Increased traffic, (c) Generation of dust (particulate matter), (d) Generation of noise, and (e) Deterioration of water quality and disturbance of river bed ecosystem from possible gas pipe line construction. The environmental management should also focus on enhancing the possible beneficial impacts arising from employment of local workforce for construction works.

The table below summarizes the potentially significant environmental impacts during construction phase, the measures needed to eliminate or offset adverse impacts and enhance positive impacts. The environmental management during the operation phase should primarily be focused on addressing the following issues: (a) Emission from the power plant, (b) Generation of noise, and (c) Waste generation at the plant.

Table 3.5: Significant Environmental Impact during Construction Phase and Mitigation Measures

Activity/Issues	Potentially Significant Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
Influx of Works	• Generation of sewage workers and solid waste	• Construction of sanitary latrine and septic tank system • Erecting "no litter" sign, provision of waste bins/cans, where appropriate • Waste minimization, recycle and reuse • Proper disposal of solid waste	Contractor (Monitoring by PIU of IE)
	• Possible spread of disease from workers	• Clean bill of health a condition for Employment • Regular medical monitoring of workers	
Transportation of equipment, materials and personnel; storage of materials	• Increased traffic/navigation • Generation of noise, especially affecting the nearby school and residential areas	• Scheduling of deliveries during non school hours and after regular working hours • School going children should be protected from traffic hazard during construction phase, with installation of proper traffic sign and warnings • Speed reduction to 10 km per hour within the Siddhirganj complex	Contractor (Monitoring by PIU of IE)
	• Deterioration of air quality from increased vehicular movement, affecting people in the surrounding areas	• Keeping vehicles under good condition, with regular checking of vehicle condition to ensure compliance with national standards	

Activity/Issues	Potentially Significant Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
	• Wind-blown dust from material (e.g., fine aggregate) storage areas	• Watering unpaved/dusty roads • Sprinkling and covering stockpiles • Covering top of trucks carrying materials to the site and carrying construction debris away from the site	
Construction activities, Including operation of construction equipment	• Generation of noise from construction activities (general plant and access road construction), especially affecting the nearby school and residential areas	• Use of noise suppressors and mufflers in heavy equipment • Avoiding, as much as possible, construction equipment producing excessive noise during school hours and also at night • Avoid use of noisy equipment such as stone crusher at the project site • Avoiding prolonged exposure to noise (produced by equipment) by workers • Creating a buffer zone between the school and construction site to reduce disturbance to normal schooling and to protect school children from health hazard	Contractor (Monitoring by PIU of IE)
	• Deterioration of air quality from wind- blown dust and possible use of equipment, such as stone (aggregate) crushers	• Not using equipment such as stone crushers at site, which produce significant amount of particulate matter • Immediate use of construction spoils as filling materials Immediate disposal/sale of excavated materials • Continuous watering of bare areas	
	• Generation of construction waste	• Hauling of construction debris away from the site and their appropriate disposal in a sanitary landfill	

Activity/Issues	Potentially Significant Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
	• Accidents	• Regular inspection and maintenance of equipment • Environmental health and safety briefing • Provision of protective gear	
	• Spills and leaks leading to soil and water contamination with hydrocarbon and PAHs	• Good house keeping • Proper handling of lubricating oil and fuel • Collection. proper treatment, and disposal of spills	
	• Employment of force work labor/force	• Local people should be employed in possible the project activities as much as possible.	
Possible gas pipeline construction across the river nearby	• Deterioration of river water quality • Disturbance of fish movement and breeding	• Regular monitoring of fisheries resources • Provision of fish-friendly structures	Contractor (Monitoring by PIU)

The table below summarizes the potentially significant environmental impacts during operation phase, the measures needed to eliminate or offset adverse impacts and enhance positive impacts. An "Project Implementation Unit" of IE, which has been recommended in the section 3.4.2 of this ESMF, at the power plant complex in order to implement the EMP.

Table 3.6: Significant Environmental Impact during Operation phase and Mitigation Measures

Activity/Issues	Potentially Significant Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
Power Generation	• Emission from the power plant	• Using tall stack • Using low nitrogen oxide burners • Installation of stack emission monitoring equipment for major pollutants • Planting of indigenous trees around the project site, especially along the boundary of	PIU of IE

Activity/Issues	Potentially Significant Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
		the school and residential areas located close to the project site Restrictions may also be imposed on installation of industries in the area that emit significant amount of articulate matter.	
	• Generation of noise	• Provision of silencers for generators and turbines • Planting of indigenous trees around the project site • Regular plant maintenance • Regular noise monitoring, especially at the school and residential quarters located close by • Use of ear-muffs and ear-plugs by plant personnel working in the generator and turbine facilities of the plant	
Water Consumption	• Depletion of groundwater resources	• Regular monitoring of groundwater level	PIU of IE
Waste generation	• Inappropriate disposal of sewage causing environmental pollution • Generation of solid waste including sludge from demineralizer.	• Good housekeeping • Proper construction and maintenance of wastewater disposal system for the plant premises • Ensuring proper storage treatment, and disposal of all solid waste	PIU of IE

3.4 Capacity Building & Training to implement the ESMF

In order to support the capacity development process effectively requires identifying what key capacities already exist and what additional capacities may be needed to reach objectives. This is the purpose of a capacity assessment. A capacity assessment is an analysis of desired capacities against existing capacities which generates an understanding of capacity assets and needs that can serve as input for formulating a capacity development response that addresses those capacities that could be strengthened and optimizes existing capacities that are already strong and

well founded. It can also set the baseline for continuous monitoring and evaluation of progress against relevant indicators and help create a solid foundation for long-term planning, implementation and sustainable results.

In the present requirement, it is necessary to assess the level of capacity to ensure environmental and social safeguards requirements of the participating actors in the IPFF project are adequate.

These are the four capacity issues that are most commonly encountered :

- institutional arrangements
- leadership
- knowledge and
- accountability.

3.4.1 *Institutional Capacity Assessment*

An understanding of the institutional needs for implementing the ESMF includes a review of the authority and capability of the implementing actors at different levels and their capacity to manage and monitor ESMF implementation.

The capacity building assessment and the plan should include :

i. **Training Needs and Plans:** IPFF envisages capacity building to BB, PFIs and investment enterprises to ensure that the ESMF is effectively operationalised.

ii. **Gap Assessment by the Sponsors:** Sponsors will assess their capacity gap in conducting environmental and social study complying with the ESMF. Accordingly, relevant environmental professionals will be hired for the study along with engaging their own staff as counterpart with a view to enhance their capacity.

Besides, a plan is to be designed for a comprehensive training programme that aims at enhancing capacity of relevant implementing agencies, including PFI, IE and Bangladesh Bank. The technical adviser of IPFF and/ or any other consultant will play the key role in the initial phase in conducting the trainings.

3.4.2 *Role and Capacity of Key Players*

The ESMF will be implemented based on a collaborative approach where the responsibility for the implementation and monitoring of the environmental and social management measures is shared between the key players, although to varying degrees. Concerned authorities and actors have to have their own specific expertise but do not always make the relationship between their activities and all cross-cutting themes of environmental and social management.

However, the successful implementation of the ESMF will rely on concerted and harmonised efforts of key players like Bangladesh Bank, subproject sponsors ("Sub-Borrowers") i.e., Investment Enterprise (IE) and Participating Financial Institutions (PFI). The role of key players will be focused on quality **ESIA along with implementation of the agreed management measures** so as to ensure compliance with applicable safeguard and national legal requirements throughout the life of the IPFF loan. The capacity and roles of key players accountable to implement the ESMF are briefly described in the following paragraphs.

a) **Bangladesh Bank:** Bangladesh Bank needs to put ESMF into practice to have a quality ESIA with defined ESMP so that the project would be bankable. In this regard, review of ESIA report of the subproject is particularly important.

Upon receiving ESIA report from PFI, it will be reviewed by an expert (to be engaged by BB) of IPFF Project Cell, who has basic experience in environmental and social knowledge as well as thorough understanding of the ESMF. The expert will also be responsible for drafting Terms of Reference (TOR) of ESIA along with supervising, communicating and coordinating the hired consultants. The Expert will also be responsible to prescribe a format for IE to submit Annual Environmental and Social Performance Monitoring Report.

In order to conduct environmental and social monitoring as well as environmental and social audit for the sub-projects, consultants may also be hired by Bangladesh Bank.

Upon completion of ESIA review along with pertinent due diligence, Bangladesh Bank will recommend PFI/ IE for necessary actions which must be included in the ESIA report to be implemented during the project life cycle to avail IPFF financing.

b) **Investment Enterprise (IE):** The Project Proponent/ IE shall be responsible for conducting ESIA and a robust ESMP. IE shall take advice from Bangladesh Bank to hire a consultant with inclusive Terms of Reference**.** IE shall also carryout regular monitoring and periodic evaluation of safeguard compliance of the project with agreed milestones and performance levels. IE shall send periodic safeguard progress report to PFI and IPFF cell.

IE"s role is to implement the World Bank and DOE safeguard instruments like

i. Environmental and Social Management Plan

ii. Resettlement Action Plan (if applicable)

iii. Tribal Peoples" Development Plan (if applicable) based on Social Impact Assessment and

iv. All other mitigation measures and action to ensure compliance with all applicable World Bank and national requirements (refer 1.11 to 1.16 of the ESMF).

For sub-projects to be implemented by IE, a Project Management Unit (PMU) will be formed by the IE. An "Environmental and Social Unit" within the PMU will oversee the environmental and social management issues associated with the project throughout the construction and operation phase; with clear lines of accountability to PMU head. The "Environmental and Social Unit" should be manned by personnel competent in undertaking environmental and social screening and monitoring and will report directly to the PMU head. The "Environmental and Social Unit" would be responsible for completing monitoring reports as well as carrying out training / awareness raising with staff and contractors, alerting management to any issues of non-compliance and suggesting remedial measures, etc.

The IE should submit Annual Environmental and Social Performance Monitoring Report (AMR) in prescribed format to IPFF Cell.

c) **Participating Financial Institution (PFI):** The role of PFI is conduct due diligence on ESIA (ESDD) complying with DOE and the World Bank requirement before submitting it Bangladesh Bank.

PFI will form an E&S team comprising members having expertise in environment and social aspects and experience with the World bank and DOE requirement and the ESMF. The team composition is shown below.

Table 3.7: Team Composition of E&S Team

Professional	Qualifications
1. Environmental Expert	Experience in conducting ESIA and ESDD complying with the World Bank and DOE requirement and familiarity with ESMF
2. Legal & Policy experts, ESIA analyst	Experience on environmental issues, legislative bindings, legal and policy framework related to DOE and the World Bank/IFC
3. Socio-economist	Experience on social baseline studies, social and community health impact studies/ assessments etc.

E&S team will conduct ESDD on the basis of the sub-project's E&S risk profile and potential impacts. The team also check the compliance status of legal covenants in terms of environmental and social aspects in the IPFF loan agreement.

- In order to conduct an effective due diligence on ESIA the E&S team will
  - ✓ collect key information regarding assets and management of E&S risks and impacts from IE
  - ✓ assess the project against performance standards and EHS Guidelines
  - ✓ complete site familiarization visit and meet with Environmental and Social Unit of IE
  - ✓ meet with local stakeholders and affected communities to discuss E&S compliance of the project
  - ✓ review the methods in preparing ESIA in line ESMF and identify the gap/ discrepancies
  - ✓ receive the revised ESIA report from IE (if required to comply with recommendations of E&S team) and submit the same to Bangladesh Bank.

Financial Institutions, FI/ PFIs shall comply with the instructions stipulated in the detailed guidelines on Environmental Risk Management (ERM) in consideration of a part of the Green Banking Policy. Under Supporting Employee Training, Consumer Awareness and Green Event of ERM, employee awareness development and training on environmental

and social risk and the relevant issues should be a continuous process as part of the FI / PFI"s Human Recourse Development.

3.4.3 *EMP Implementation and Monitoring Budget*

Cost of implementing environmental management plan (EMP) including monitoring activities needs to be estimated as a part of the preparation of EMP. Many of the activities to be carried out as a part of EMP would not involve any additional direct cost e.g., employing existing work force, where appropriate; keeping sub-project vehicles in good operating condition; scheduling deliveries of materials/ goods; good housekeeping, avoiding spills; etc. On the other hand, a number of activities would require additional cost Environmental monitoring during construction phase would involve direct cost. At the same time, a number mitigation measures (including health and safety measures) would require additional cost; these include medical examination, installation of health and safety signs, awareness documents (signs/ posters), water sprinkling on surfaces, traffic control (e.g., deputing flagman), traffic light, plantation, and protective gear. The table below provides basis/ method of estimation of costs of different items of EMP. Similar approach should be followed for estimation of cost of additional measures, if required.

Table 3.8: Example of Implementation and Monitoring Budget

SL No	Item	Basis of cost/Estimated cost[2]
1.	Noise level	Prevailing rate (- Tk. 5,000/- per measurement per day)
2.	Air Quality (SPM, PM_{10})	Prevailing rate (- Tk. 8,000/- per measurement)
3.	Water quality Turbidity, Total Suspended Solids, Dissolved Oxygen)	Prevailing rate (- Tk. 2,000/- per sample)
4.	Health/ safety signs (size and number to be estimated)	Prevailing PWD/LGED/REB/ PGCB rate /Lump sum amount
5.	Water sprinkling on aggregate	Latest PWD/LGED rate (if available)/A fixed rate per cubic meter of aggregate per day
6.	Traffic control (estimate number of flagman needed and duration of work)	Latest PWD/ LGED rate (if available)/A fixed rate per flagman per day/ Lump sum amount
7.	Traffic light	Latest PWD/ LGED rate (if available)/ Lump sum amount
8.	Others	

Note: Cost items of EMP implementation depend on nature of the project and phases of project implementation

[2] Prevailing cost means cost as of 2014

4 SPECIFIC SOCIAL SAFEGUARDS DOCUMENTS

4.1 Preamble

The World Bank, the financer of the IPFF project, requires the project sponsors to identify, review and abide by all *laws of the host country* that are applicable to land acquisition and involuntary resettlement including:

i. The scope of the power of eminent domain and the nature of compensation associated with it, both the procedures for assessing compensation values and the schedule for making compensation payments.
ii. The legal and administrative procedures applicable, including the appeals process and the normal time for such procedures.
iii. Land titling and registration procedures.
iv. Laws and regulations relating to agencies responsible for implementing resettlement and those related to land compensation, consolidation, land use, environment, water use and social welfare.

4.2 World Bank's Safeguard Policies

4.2.1 *OP 4.12 Requirements (Involuntary Resettlement)*

The primary objective of the World Bank policy is to explore all alternatives to avoid or minimize involuntary resettlement. Where resettlement is unavoidable, the resettlement activities should be conceived and executed as sustainable development programs, providing sufficient resources to enable affected persons to share in project benefits and to assist in their efforts to improve their livelihood and standard of living or at least to restore them to pre-project level. The policy also requires that affected people are meaningfully consulted and should have opportunities to participate in planning and implementing resettlement programs.

Measures required to ensure that resettlement has a positive outcome are as follows:

i. Providing project-affected persons with options; permitting their participation in planning and selecting these options; prompt compensation at full replacement cost for losses; choosing relocation sites that provide, at a minimum, the same benefits as the sites that are replaced;
ii. Providing allowances and other assistance to make a smooth transition after displacement
iii. Identifying vulnerable groups and providing special assistance to these groups
iv. Implementing an institutional structure that supports the process to a successful end.

World Bank's policy on Involuntary Resettlement requires payment of compensation and other assistance to project affected people before they are displaced from their existing locations. Further, the policy requires income rehabilitation assistance to those affected due to the loss of their productive assets or loss of incomes and livelihood.

Absence of legal title does not exclude affected individuals from the eligibility to receive compensation and or other assistance. The Policy also requires that those without a legal title should be given assistance to meet the objectives of the policy. The genesis of these rights may come from continued possession of public land where the government has not sought eviction. The Bank's policy also recognizes that stakeholders who illegally occupy project-affected areas after established cut-off-date for any components are not eligible for compensation. Institutional or project specific policies are being prepared to address these gaps and to meet the requirements of multilateral agencies and best practices.

The principles for World Bank OP 4.12, involuntary resettlement are :

i. Involuntary resettlement should be avoided where feasible, or minimized, exploring all viable alternative project plans
ii. Where it is not feasible to avoid resettlement, resettlement activities should be conceived and executed as sustainable development programs.
iii. Displaced persons should be assisted in their efforts to improve their livelihoods and standards or at least restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.

4.2.2 *OP 4.10 Requirements (Indigenous Peoples)*

This policy contributes to the WB‟s mission of poverty reduction and sustainable development by ensuring that the development process fully respects the dignity, human rights, economies, and cultures of. The Bank recognizes that the identities and cultures of Indigenous Peoples are inextricably linked to the lands on which they live and the natural resources on which they depend. These distinct circumstances expose Indigenous Peoples to different types of risks and levels of impacts from development projects, including loss of identity, culture, and customary livelihoods, as well as exposure to disease. As social groups with identities that are often distinct from dominant groups in their national societies, Indigenous Peoples are frequently among the most marginalized and vulnerable segments of the population. A project proposed for Bank financing that affects Indigenous Peoples requires:

i. Screening by the Bank to identify whether Indigenous Peoples are present in, or have collective attachment to, the project area
ii. A social assessment by the borrower
iii. A process of free, prior, and informed consultation with the affected Indigenous Peoples‟ communities at each stage of the project, and particularly during project preparation, to fully identify their views and ascertain their broad community support for the project.
iv. The preparation of an Indigenous Peoples Plan (IPP) or an Indigenous Peoples Planning Framework (IPPF).
v. Disclosure of the draft Indigenous Peoples Plan or draft Indigenous Peoples Planning Framework

The borrower makes the social assessment report and draft IPP/IPPF available to the affected Indigenous Peoples‟ communities in an appropriate form, manner, and

language. Before project appraisals, the borrower sends the social assessment and draft IPP/IPPF to the Bank for review. Once the Bank accepts the documents as providing an adequate basis for project appraisal, the Bank makes them available to the public in accordance with The World Bank Policy on Disclosure of Information, and the borrower makes them available to the affected Indigenous Peoples‟ communities in the same manner as the earlier draft documents.

4.3 Comparison of Requirements of GoB and WB

While Bangladesh law provides for land acquisition, the regulations and rules are not very explicit regarding the resettlement and rehabilitation of Project Affected Persons (PAPs). The World Bank OPs, on the other hand, are more comprehensive, requiring the following:

i. Payment of adequate compensation for various losses at replacement value.
ii. Rehabilitation to ensure improvement/or at least restoration of lost economic activities, income and standard of living.
iii. Public consultation during the entire process of social assessment and disclosure of information (where ensuring that the information available to stakeholders is adequate and accessible is key)
iv. A grievance procedure that is accessible and adequately responsive (time for processing claims, etc) A Resettlement Action Plan, and where appropriate, an Indigenous Peoples‟ Development Plan

The Table 4.1 lists some key comparisons between Bangladesh Law and WB policy regarding land acquisition and compensation.

Table 4.1: Comparison of Bangladesh Law and World Bank OP 4.12

Issue	1982 ORDINANCE	OP 4.12
Coverage	Legal owners Share-croppers Tenants	All affected parties, including squatters and illegal occupants
Compensation	Based on market values over previous 12 months	Replacement cost at current market price Requires livelihood restoration component.
Uses of material from dismantled structures	Material is to be auctioned after being compensated for it	Material can be taken and re-used by affected party
Minimization of impacts	Discourages unnecessary acquisition but no mechanism to monitor	Alternative analysis required to justify avoidance and/or mitigation of impacts
Cut-off dates	Not addressed	Important to ensure that squatters are included in compensation and to prevent rent-seeking behavior of additional squatters settling onto project land

Issue	1982 ORDINANCE	OP 4.12
Consultation	No consultation required	Consultation as core issue in RAP preparation and implementation
Relocation assistance	No assistance provided	Relocation assistance required
Livelihood restoration	Not addressed	Livelihood restoration component and attention to post-resettlement required

4.4 Addressing WB Safeguard Policies

The Table 5.2 lists the relevant WB policies regarding social aspects such as land acquisition and compensation

4.5 Social Compliance Matrix

The Table 4.2 has been designed considering OP 4.12 and OP 4.10 of World This will assist the project sponsor to comply with the requirement for social aspects for IPFF funding.

Table 4.2 : Addressing World Bank Safeguard Policies

World Bank Policy	Reasons of Applicability	Addressed by
Physical Cultural Resources OP 4.11	Project may pass through culturally significant areas – including areas that are an integral part of a people‟s cultural identity and practices	Usually avoided by Govt. authorities while selecting the site
Involuntary Resettlement OP 4.12	Project may require physical relocation of people or entire communities and/or private property acquisition (land, commercial, residential and other structures) leading to resettlement.	A process of consultation, including adequate and accessible disclosure of any resettlement information. Preparation of SIA , a Resettlement Framework and/or RAP including a compensation plan and entitlement policy and updating them in accordance with changes in the Project involving land acquisition. This includes an accessible grievance procedure.

World Bank Policy	Reasons of Applicability	Addressed by
Indigenous Peoples OP 4.10	Project affecting the dignity, human rights, economic and cultures of Indigenous Peoples because of acquisition of land and common resources on which they depend for their social, economic and cultural needs and also their homesteads requiring relocation.	Preparation of Tribal Peoples' Development Plan (TPDP) based on Social Impact Assessment that involved free, prior and informed consultations and updating it in accordance with changes in the Project that involves Indigenous Peoples.

Table 4.3 : Social Compliance Matrix

Project Stage	Action required	Applicable standards and institutional responsibility
Pre-feasibility studies	Social screening For projects not requiring specific resettlement and land acquisition studies social performance frameworks will be designed	OP 4.12 para 27 For FIL projects requiring involuntary resettlement, the financial intermediary (FI) screens sub-projects to ensure consistency with OP 4.12. If the initial screening identifies indigenous peoples present, screening as stated in OP 4.10 will be undertaken.
	Public information campaign/ communication, consultation and participation	The project sponsor will carry out a public information campaign (which may be monitored by the relevant implementing agency) that will comply with OP 4.12
Project Design	Scoping: Identify significant potential impacts and project alternatives and propose terms of reference for SIA	WB OP 4.12 The project sponsor will identify the presence of significant potential impacts and assess against project alternatives and then propose terms of reference for the SIA
	Baseline Data Collection (SIA): Identify current socio-economic conditions without the project and update it during the project with changes	The project sponsor will carry out a sample socio-economic survey of both proposed project area as well as surrounding areas of the project that would have impacts. The socio-economic survey would have to comply to OP 4.12 Annex A
	Estimate social impacts	The project sponsor will estimate impacts based on OP 4.12 For IPDP, OP 4.10 Annex A will be considered.
	Preparation of SMP	The project sponsor to design plan for specific actions during land acquisition, engineering design and construction stages to conform to GoB requirement (Acquisition & Requisition of Property Ordinance 1982) as well as World Bank‟s

Project Stage	Action required	Applicable standards and institutional responsibility
		requirements OP 4.12
	Preparation of RAP on the basis of SIA	The project sponsor will prepare a RAP following OP 4.12 Annex A
	Preparation of IPDP on the basis of SIA	The project sponsor will prepare IPDP (if indicated by the SIA) following OP 4.10 Annex B
	Design mitigation measures	The project sponsor will design mitigation measure in line with OP 4.12. For Indigenous peoples OP 4.10 will be consulted.
Project Appraisal/ Approval	Review and Approval of RAP	PFI is to review report to assess compliance with WB 4 OP.12 and if relevant OP 4.10. Also to check for compliance with GoB"s requirements for compensation for LA.
Implementation Plan	Implement SMP	Appointed Agency (Consulting company or NGO) to implement
Engineering Design & Construction Works	Social Monitoring of SMP	Appointed Agency (Consulting company or NGO) to implement
Post-Construction	Social Audit and regular monitoring arrangements and evaluation	Selected Agency (Consulting company or NGO)to audit

4.6 Social Impact Assessment (SIA)

The SIA is one of the primary requirements of the project sponsor in order to comply with social requirements for a World Bank-assisted project. The project sponsor should use social impact assessment specialists for the SIA.

4.6.1 *Identifying Social Impact Assessment Variables*

This is another important consideration before conducting the SIA, as this incorporates the local characteristics of the project affected areas and establishes a baseline for variables that would be used to collect data. A general list of social variables is given below:

a) Population Characteristics: present population and expected change, ethnic and racial diversity, and influxes and outflows of temporary residents as well as the arrival of seasonal or leisure residents.

b) Community and Institutional Structures: the size, structure, and level of organization of local government including linkages to the larger political system

c) Political and Social Resources: distribution of power authority, the interested and

affected publics, and the leadership capability and capacity within the community.

d) Individual and Family changes: factors, which influence the daily life of the individuals and families, including attitudes, perceptions, family characteristics and friendship networks.

e) Community Resources: patterns of natural resource and land use; the availability of housing and community services.

The Table 4.4 gives a matrix relating project stage to Social Impact Assessment Variables.

Table 4.4 : Social Impact Assessment Variables Matrix

Social Impact Assessment Variable		Pre-Construction	Implementation /Construction	Operation/ Maintenance
i.	Population Characteristics			
ii.	Population change			
iii.	Ethnic and racial distribution			
iv.	Relocated populations			
v.	Influx or outflows or temporary workers			
vi.	Seasonal residents			
vii.	Community and Institutional Structures			
viii.	Voluntary association			
ix.	Interest group activity			
x.	Size and structure of local government			
xi.	Historical experience with change			
xii.	Employment/income characteristics			
xiii.	Employment equity of minority groups			
xiv.	Local/regional/national linkages			
xv.	Political and Social Resources			
xvi.	Distribution of power and authority			
xvii.	Identifications of stakeholders			
xviii.	Interested and affected publics			
xix.	Leadership capability and characteristics			
xx.	Individual and Family Changes			
xxi.	Perceptions of risk, health, and safety			
xxii.	Displacement/relocation concerns			
xxiii.	Trust in political and social institutions			

Social Impact Assessment Variable		Pre-Construction	Implementation /Construction	Operation/ Maintenance
xxiv.	Residential stability			
xxv.	Community Resources			
xxvi.	Change in community infrastructure			
xxvii.	Land use patterns			
xviii.	Effects on cultural, historical, and archaeological sites			

4.6.2 *Combining Social Impact Assessment Variables, Project Stage, and Setting*

Social impact specialists engaged by the project sponsor will construct a matrix to that will serve as a guide for their assessing of significant social impacts. For each project stage, the assessor should identify potential impacts on each social variable identified in the matrix. This approach ensures that no critical areas are overlooked. The analytical procedures would be repeated for *each of the SIA variable* for *each stage of the project*. The procedures for accomplishing these tasks are outlined below:

4.6.3 *Steps in the Social Impact Assessment Process*

The process in the social assessment is described below in 10 steps.

i. ***Public Involvement***: Develop an effective public Involvement plan to involve all potentially affected publics. Requires identifying and working with all potentially affected groups starting at the very beginning of planning for the proposed action.

ii. ***Identification of Alternatives:*** Describe the proposed action of policy change and reasonable alternatives. The proposed action is described in detail to begin to identify the data requirements needed from a project proponent (World Bank) to frame the SIA

iii. ***Baseline Conditions***: Describe the relevant impact zone/area of influence and baseline conditions. These are the existing conditions and past trends associated with human environment in which the proposed activity is to take place.

The Base conditions would include the following set aspects of human environment:

- Relationship with the biophysical environment
- Historical background: including initial settlement and subsequent shifts in population
- Political and social resources
- Culture, attitudes and socio-psychological conditions
- Population characteristics including the demographics of relevant groups (including all significant stakeholders and groups)

iv. ***Scoping:*** Identify the full range of probable social impacts that will be addressed based on discussion or interviews with numbers of al potentially affected. After initial scoping, the social impact assessor (social impact specialist engaged by the

project sponsor) selects the SIA variables for further assessment situations. Considerations need to be given to both the impacts perceived by the project sponsor/executing agency (as the case may be) and to those perceived by the affected groups and communities through consultations.

The principal methodology employed here is reviews of the existing social science literature, public scoping, public surveys, and public participation techniques. It is a requirement of OP 4.12 that views of affected people are taken into consideration.

Relevant criteria for selecting impacts include:

i. Probability of the event occurring
ii. Number of people including indigenous populations that will be affected
iii. Duration of impacts (long-term vs. short-term)
iv. Value of benefits and costs to impacted groups (intensity of impacts)
v. Extent that the impact is reversible or can be mitigated
vi. Likelihood of causing subsequent impacts
vii. Relevance to present and future policy decisions
viii. Uncertainty over possible effects
ix. Presence or absence of controversy over the issue.

v. ***Projection of Estimated Effects-Investigate the probable impacts***: The probable social impacts will be formulated in terms of predicted conditions without the actions (baseline projection); predicted conditions with the actions; and predicted impacts which can be interpreted as the differences between the future with and without the proposed action. Investigation of the probable impacts involves five major sources of information:

- Data from project proponents
- Records of previous experience with similar actions as represented in reference literature as well as other SIA"s.
- Census and vital statistics
- Documents and secondary sources
- Field research, including informant interviews, hearing, group meetings, and surveys of the general population.

The record of previous experience is very important to the estimation of future impacts. Expert knowledge of the social impact specialists is used to enlarge this knowledge base and to judge how the study case is likely to deviate from the typical patterns.

vi. ***Predicting responses to impacts:*** This determines the significance of the identified social impacts. After direct impacts have been estimated the Social Impact Specialist must next estimate how the affected people will respond in terms of attitude and actions. The actions of affected groups are to be estimated using comparable cases and interviews with affected people about what they expect to do.

vii. ***Indirect and Cumulative Impacts***: This estimates subsequent impacts and cumulative impacts. Indirect impacts are those caused by the direct impacts; they often occur later than the direct impacts, or further away. Cumulative impacts are those impacts which result from the incremental impacts of an action added to other past, present, and reasonably foreseeable future actions regardless of which agency or person undertakes them.

viii. ***Changes in Alternatives***: Recommend new or changed alternatives and estimate or project their consequences. Each new alternative or recommended change should be assessed separately. Here more innovative alternatives and changes probably should be presented in an experimental structure.

ix. ***Mitigation***: Develop a mitigation plan. A SIA should identify means to mitigate adverse impacts. These measures include avoiding the impact by not taking or modifying an action; minimizing, rectifying, or reducing the impacts through the design or operation of the project; or compensation for the impact by providing substitute facilities, resources, or opportunities

x. ***Monitoring and Impact Evaluation***: Develop a monitoring and impact evaluation plan. A monitoring and impact evaluation program should be developed for identifying deviations from the proposed action and any important unanticipated impacts. A monitoring plan should be developed to track project and program development and compare real impacts with projected areas.

4.7 Identification of Impact

Basic categories of issues/impacts (Table 4.5) those needed to be addressed under the entitlement framework are the following:

- Loss of land
- Loss of water source
- Loss of structure
- Loss of source of livelihood
- Loss of access to common resources and facilities
- Loss of standing crops, trees and perennial trees
- Loss of public infrastructure
- Loss of services (electricity, water, transport, etc)
- Loss of or imperilled access to any of the above

Table 4.5 : List of Probable Impacts during Various Phases of the Project

Pre-Construction	Construction	Operation & Maintenance
Site Surveys & Investigations • Inducement of uncertainties relating to land acquisition • Stimulation of new construction to obtain higher compensation	**Contractors' Camps.** **Employment** • Employment opportunities for local population • Conflicts between the imported workers and local population • Risk of HIV/AIDS and other transmittable diseases • Inducement of traffic congestion & related road safety hazards	• Increased employment opportunities • Increased economic activity
Land & Property Acquisition • Loss of and displacement from homestead land • Loss of agricultural land and other productive assets • Loss of business/commercial land or premises • Loss of public buildings and facilities • Loss of cultural heritage/ Resources • Loss of sensitive habitats	**Clearance of Site** • Interference with utility services	
Construction Materials • Loss of and displacement from productive land • Waterborne disease risks/Safety hazard on abandonment • Visual alteration in landscape quality		
Construction Traffic • Damage to road pavement & structures • Increased traffic congestion & related road safety hazards.		

4.8 Impact Mitigation

Impact mitigation includes the principles, procedures and mitigation measures that are relevant and suitable to the project for ensuring the most appropriate environmental mitigation and enhancement plans applicable during different stages of project implementation. To avoid and minimize the impacts resulting from the activities of the different sub-projects, measures/management plans, which are essential to mitigate the impacts as discussed, are based upon appropriate technological design, improvements or adjustments, policy including good site operational practices etc.

Environmental and social impacts of the subprojects can broadly be classified as those taking place during pre-construction, construction and operational phases. The overall strategy has the following sequence:

i. Impact avoidance: Changing project location, design and construction methods to avoid impacts.
ii. Impact minimization: Where impacts cannot be avoided, implementing mitigation measures to reduce the impact to acceptable levels.
iii. Compensation: Arranging compensation where impacts cannot be avoided or sufficiently mitigated.
iv. Enhancement: measures, which, at insignificant cost to the project, give appreciable social or developmental benefits.

The mitigation plan is adopted to highlight the action procedures to avoid/ minimize/ control the resultant impacts arising out of the different project phases i.e. pre-construction, construction and operation.

4.9 Resettlement Action Plan (RAP)

4.9.1 *Land Acquisition Plan*

For any land acquisition, a Land Acquisition Plan (LAP) is needed. Preparation of the land acquisition plans will include locating each of the components; sorting out the ownership status of the lands in which project shall be established; and preparing the schedules of plots (with „dag" or Plot numbers and other information required by the acquiring body) from which lands are to acquired. These are the documents the relevant project authority will submit to DC along with a request to start the acquisition process. LAPs will be prepared for proposed site and will ensure that the total amount of land in the individual acquisition packages does not exceed 50 standard big has, which the Divisional Commissioners can approve without referring to the Ministry of Land.

4.9.2 *Resettlement Types*

For acquisition of land, if the SIA indicates that a Resettlement Action Plan (RAP) is required, then the project sponsor will engage a Social Specialist who will prepare a RAP considering all World Bank OPs.

i) *Short RAP*: As per WB OP 4.12, where impacts on the entire displaced population are minor or fewer than 200 people are displaced, a short RAP is required.

ii) *Full RAP* In other cases, a full RAP is to be prepared.

Resettlement effects result from a wide range of project types envisaged under the IPFF. These range from small plots of land required for schools or health centers may create limited resettlement effects. Long alignments required for power lines, roads, railways, or canals may cause resettlement along a narrow right of way, or disrupt community networks, dividing roads, paths, irrigation systems, and landholdings. Most types of projects have the resettlement effects as set out in the **Table 4.6.**

Table 4.6: Resettlement in Different Project Types

Sector	Project Components	Type of Resettlement Effect
Power and Energy	• Transmission alignment • Power generation plants, transmission stations, substations, and access roads • Hydroelectric power reservoirs	• Minor resettlement effects from construction of pylons. These might be severe if landholdings are small. Right-of-way restrictions, without land acquisition, might affect people‟s land use along the transmission alignment. May require temporary land borrow during construction. Well documented consultation with land owners and a signed MOU permitting the project to draw lines across private lands are required. • May cause severe localized effects, and temporary land borrow during construction. Power plants may cause resettlement effects through pollution of land, air, or water. • Reservoir construction can have severe and often widespread effects, displacing whole communities from construction and inundation areas, and disrupting patterns of communication, landholdings, social and economic systems, and resource use. Temporary land borrow for construction.
Transport	• Road or rail alignment • Associated stations, terminals, bridges • Airports, seaports, river ports	• Resettlement effects over alignment. Disruption can usually be addressed within existing community units because alignment is narrow. However, if the alignment is long, cutting across administrative boundaries, the distribution of responsibilities may be unclear and entitlements may vary between sections. Alignments might divide landholdings, local roads and paths, irrigation systems, economic and social networks, or access to resources. May require temporary land borrow for construction • May cause localized resettlement effects, and necessitate temporary land borrow for construction

Sector	Project Components	Type of Resettlement Effect
		• Severe resettlement effects for communities currently occupying land are possible. Can displace whole communities, or disrupt patterns of communication, landholdings, social and economic systems and resource use. Temporary land borrow for construction
Water supply and sanitation	• Reticulation systems • Pumping stations, treatment sites • Reservoirs for water supply	• Temporary land borrowing. Use of existing rights-of-way (for example, roads) can minimize disruption. Narrow land corridors might be acquired permanently with minor disruption. • May cause more severe localized effects. Temporary land borrowing for construction. • Reservoir construction can have severe and often widespread effects
Solid waste	• Transfer stations, landfill sites	• May cause severe localized effects
Urban renewal	• Urban infrastructure sites	• May cause severe localized effects
Health	• Sites for hospitals, clinics, teaching facilities	• May cause severe localized effects. Communities might be prepared to volunteer small sites for community services.
Education	• Sites for schools, training institutions, etc	• May cause severe localized effects. Communities might be prepared to volunteer small sites for community services.
Irrigation and Flood control	• Canal alignments, protective embankments, and associated works • Dams	• Resettlement effects over a narrow alignment. • Dam construction can have severe and widespread effects
Mining operations	• Strip mining	• May cause severe localized effects, or resettlement effects due to severe loss of environmental quality (ex. Polluted land or water)
Forestry developments	• Reforestation, industrial plantations, forest closure	• May cause loss of access to forest products for cash and subsistence. Loss of grazing rights. Displacements of communities.

Sector	Project Components	Type of Resettlement Effect
Parks, conservation sites	• National parks or biodiversity areas	• May cause loss of grazing rights, or disruption of grazing routes. May displace communities from park.

4.10 Institutional Framework

The findings of an analysis of the institutional framework will cover:

i. the identification of agencies responsible for resettlement activities and NGOs that may have a role in project implementation;

ii. an assessment of the institutional capacity of such agencies and NGOs;

iii. any steps that are proposed to enhance the institutional capacity of agencies and NGOs responsible for resettlement implementation.

a. ***Grievance procedures***: Affordable and accessible procedures for third-party settlement of disputes arising from resettlement; such grievance mechanisms should take into account the availability of judicial recourse and community and traditional dispute settlement mechanisms.

b. ***Organizational responsibilities*** : The organizational framework for implementing resettlement, including identification of agencies responsible for delivery of resettlement measures and provision of services; arrangements to ensure appropriate coordination between agencies and jurisdictions involved in implementation; and any measures (including technical assistance) needed to strengthen the implementing agencies' capacity to design and carry out resettlement activities; provisions for the transfer to local authorities or resettlers themselves of responsibility for managing facilities and services provided under the project and for transferring other such responsibilities from the resettlement implementing agencies, when appropriate.

c. ***Implementation*** **schedule**: An implementation schedule covering all resettlement activities from preparation through implementation, including target dates for the achievement of expected benefits to resettle‟s and hosts and terminating the various forms of assistance. The schedule should indicate how the resettlement activities are linked to the implementation of the overall project.

d. ***Costs and budget:*** Itemized cost estimates shall be given for all resettlement activities, including allowances for inflation, population growth, and other contingencies; timetables for expenditures; sources of funds; and arrangements for timely flow of funds, and funding for resettlement, if any, in areas outside the jurisdiction of the implementing agencies.

4.11 Monitoring & Evaluation

Arrangements for monitoring of resettlement activities by the implementing agency, supplemented by independent monitors as considered appropriate by the Bank, to ensure complete and objective information; performance monitoring indicators to measure inputs, outputs, and outcomes for resettlement activities; involvement of the displaced persons in the monitoring process; evaluation of the impact of resettlement

for a reasonable period after all resettlement and related development activities have been completed; using the results of resettlement monitoring to guide subsequent implementation.

5 GENERIC TOR FOR CONDUCTING AN ESIA

Environment and Social Impact Assessment (ESIA) is a decision support mechanism to ensure that the project design and implementation are environmentally sound and sustainable. During the preparation phase, the objective of the ESIA is to provide inputs to the selection of sub-projects, feasibility study; preliminary and detailed design as well as assist development of a holistic development of the project package. During the implementation phase, environmental management plans (developed as a part of the ESIA during the preparation phase) are to be used for executing the environmental mitigation, enhancement and monitoring measures.

5.1 Objectives of ESIA

In the preparation phase, the ESIA shall achieve the following objectives:

i. Identify and analyze upstream environmental issues that may affect the project and the sector.
ii. Establish the environmental and social baseline in the study area, and identify any significant environmental, social, health and safety issues (direct/indirect/induced/cumulative).
iii. Assess impacts of the project, and provide for measures to address the adverse impacts by the provision of the requisite avoidance, mitigation and compensation measures.
iv. Integrate the environmental issues in the project planning and design; and
v. Develop appropriate management plans for implementing, monitoring and reporting of the suggested environmental mitigation and enhancement measures.

The ESIA studies and reporting requirements to be undertaken under these TOR must conform to the GoB regulations and the Bank guidelines.

5.2 Description of the Project

Include description of the project; covering geographical location, type of development envisaged, including a description of project activities. Also include current status of the project. Provide brief information on any other study already completed/on-going or proposed) to be added by Client.

5.3 Scope of Work

The ESIA comprises the following 3 components: (i) Environmental screening / Inception Report for the entire project; (ii) Environmental and Social Impact Assessment (ESIA) for the individual project/sub-projects, as required; and (c) Environmental and Social Management Plans (ESMPs) for the individual project/sub-projects.
The following section gives the detailed scope of work in each of these stages.

5.3.1 *Inception*

The Consultants shall use the inception period to familiarize with the project details. The Consultants shall recognize that the remaining aspects of the project, such as

engineering and social, would be studied in parallel, and it is important for all these aspects are integrated into the final project design to facilitate their successful project implementation. The Consultants should also recognize that due care and diligence planned during the inception stage helps in improving the timing and quality of the ESIA reports.

During the inception period the Consultants shall: (a) study the project information to appreciate the context within which the ESIA has to be carried-out; (b) identify the sources of secondary information on the project, on similar projects and on the project area; (c) carry out a reconnaissance survey and (d) undertake preliminary consultations with selected stakeholders.

Following the site visits and stakeholder consultations, as well as a review of the conditions of contract with the Client, the consultant shall analyse the adequacy of the allocated man-power, time and budget and shall clearly bring out deviations, if any. The Consultant shall study the various available surveys, techniques, models and software in order to determine what would be the most appropriate in the context of this project.

The Consultant shall interact with the engineering and social consultants to determine how the ESIA work fits into the over-all project preparation cycle; how overlapping areas are to be jointly addressed; and to appropriately plan the timing of the deliverables of the ESIA process. These shall be succinctly documented in the Inception Report.

5.4 Environmental Screening

Consultants shall summarize the potential environmental impacts. During such categorization, consideration shall be paid to: (i) location of project with respect to environmentally sensitive areas; and (ii) volume, nature and technology of construction. The screening parameters should be such that their identification and measurement is easy, and does not involve detailed studies.

5.5 Environmental Scoping

Based on result of the environmental screening exercise, consultants shall suggest the scope of Environmental and Social Impact Assessment to be undertaken. It shall include a listing of other environment issues that do not deserve a detailed examination in the project ESIA (covering, for example, induced impacts that may be outside the purview of the client) along with a justification. The scoping needs to identify and describe the specific deviations or inclusions vis-à-vis the EA ToR provided, if any, along with a justification; modify this ToR for the project ESIA, if required; and recommend studies that need to be conducted in parallel but are outside the ESIA process.

i. ***Baseline:*** All regionally or nationally recognized environmental resources and features within the project‟s influence area shall be clearly identified, and studied in relation to activities proposed under the project. These will include all protected areas (such as national parks, wildlife sanctuaries, reserved forests, RAMSAR sites, biosphere reserves, wilderness zones), unprotected and community forests and forest patches, wetlands of local/regional importance not yet notified, rivers, rivulets and other surface water bodies. and sensitive environmental features such

as wildlife corridors, biodiversity hotspots, meandering rivers, flood prone areas, areas of severe river erosion, flood embankments (some of which are also used as roads). Consultants shall consolidate all this information in a map of adequate scale.

ii. ***Stakeholder Identification and Consultation:*** Consultation with the stakeholders shall be used to improve the plan and design of the project rather than merely having project information dissemination sessions. The consultants shall carry out consultations with Experts, NGOs, concerned Government Agencies and other stakeholders to: (a) collect baseline information; (b) obtain a better understanding of the potential impacts; (c) appreciate the perspectives/concerns of the stakeholders; and (d) secure their active involvement during subsequent stages of the project.

Consultations shall be preceded by a systematic stakeholder analysis, which would: (a) identify the individual or stakeholder groups relevant to the project and to environmental issues; (b) include expert opinion and inputs; (c) determine the nature and scope of consultation with each type of stakeholders; and (d) determine the tools to be used in contacting and consulting each type of stakeholder group. A systematic consultation plan with attendant schedules will be prepared for subsequent stages of project preparation as well as implementation and operation, as required.

iii. ***Identification of Relevant Macro/Regional Level Environmental Issues:*** Consultants shall determine the Valued Environment Components (VECs) considering the baseline information (from both secondary and primary sources), the preliminary understanding of the activities proposed in the project and, most importantly, the stakeholder (and expert) consultations, which would need to be carefully documented. Use of iterative Delphi techniques is recommended.

Based on the identification of VECs, consultants shall identify information gaps to be filled, and conduct additional baseline surveys, including primary surveys. The consultants shall conduct a preliminary analysis of the nature, scale and magnitude of the impacts that the project is likely to cause on the environment, especially on the identified VECs, and classify the same using established methods. For the negative impacts identified, alternative mitigation/management options shall be examined, and the most appropriate strategy/technique should be suggested. The preliminary assessment should clearly identify aspects where the consultants shall also analyse indirect and cumulative impacts during all phases and activities of the project. For the positive measures identified, alternative and preferred enhancement measures shall be proposed.

iv. ***Environmental Assessment:*** The Consultants shall undertake necessary impact analysis on the basis of primary and secondary information and outputs from the stakeholder consultation process. In the cases of very significant environmental losses or benefits, the consultants shall estimate the economic/financial costs of environment damage and the economic/financial benefits the project is likely to cause. In the cases, the impacts or benefits are not too significant, qualitative methods could be used. In addition, wherever economic and financial costs of the environmental impacts cannot be satisfactorily estimated, or in the cases of

significant irreversible environmental impacts, the consultants shall make recommendations to avoid generating such impacts.

v. ***Environmental and Social Management Plan :*** The consultants shall prepare an ESMP to address identified planning, design, construction and operation stage issues. For each issue, the consultants shall prepare a menu of alternative avoidance, mitigation, compensation, enhancement and/or mitigation measures, as required/necessary. Consultants shall provide robust estimates of costs for environmental management measures. These costs shall be verified for common works items in line with the rate analysis for other works. The consultants shall organize consultations with line departments and will the finalize the ESMP.

vi. ***Environmental Inputs to Feasibility Study and Preliminary Project Design:*** The ESIA consultants shall make design recommendations, related to alignment, cross-sections, construction material use, mitigation and enhancement measures. The ESIA consultants shall interact regularly with the Client and familiarize themselves with the project‟s over-all feasibility analyses models, so that the ESIA inputs are in conformity to the needs of the over-all feasibility study.

vii. ***Capacity Building and Training Plan Preparation:*** Based on the preliminary findings of the environmental screening, stakeholder consultations and analysis of the project sponsor‟s capacity to manage environmental issues, the consultants shall prepare a Capacity Building Plan (including requirement of additional technical staff and facilities) to ensure effective implementation of the ESMP. Earmarking staff for environmental and social management and improving their skill-sets would be simultaneously pursued during project preparation and implementation.

A detailed training plan shall be prepared to develop and strengthen environmental capacities of the project sponsor. The strategy may include, as deemed necessary, a mix of hands-on training for key staff involved in project preparation, site visits to similar projects, and whenever required, full-fledged academic programs on environmental management at well-recognized institutions.

The consultants shall interact regularly with the project sponsor throughout project preparation to ensure that the knowledge, skills and perspectives gained during the ESIA assignment are transferred to the sponsor and are utilized effectively during project implementation.

viii. ***Co-ordination among Engineering, Social, Environment and Other Studies:*** The consultants, with assistance from the project sponsor, shall establish a strong co-ordination with the other project-preparation studies – engineering, social and/or institutional development. The consultants shall keep in mind the specific requirements of the project in general, and the engineering/design studies in particular, and shall plan their outputs accordingly. It is recommended that some of the consultation sessions may be organised in co-ordination with the social and engineering consultants, as feasible, and when the stakeholders consulted are the same.

The consultant shall review the contract documents – technical specifications, and rate analysis, to ensure that there are minimal conflicts between the ESMP stipulations and specifications governing the execution of works under the project.

ix. ***Public Disclosure:*** The consultants shall prepare a non-technical ESA summary report for public disclosure and will provide support to the project sponsor in meeting the disclosure requirements, which at the minimum shall meet the World Bank‟s policy on Public Disclosure. The consultants will prepare a plan for in-country disclosure, specifying the timing and locations; translate the key documents (including executive summary of ESIA/ESMP) in local language; draft the newspaper announcements for disclosure; and help the sponsor to place all the ESA reports in the sponsor‟s website.

x. ***Consultant's Inputs:*** The Consultants are free to employ resources as they see fit. Additional expertise, shall be provided as demanded by the context of the project. The consultants are encouraged to visit the project area and familiarize themselves, at their own cost, before submitting the proposal; and propose an adequate number and skill-set for the senior specialists and technical support staff for the ESIA assignment. Further, the consultant will allocate adequate number of field surveyors, distinct from the technical support staff, to complete the study in time. Timing is an important essence for any ESIA study, which shall be closely coordinated with the works of the engineering and social teams, simultaneously involved in preparation of the project.

The consultants shall provide for all tools, models, software, hardware and supplies, as required to complete the assignment satisfactorily. These should be widely recognized or accepted. Any new model or tool or software employed should be field-tested before use or the purpose of this ESIA.

The consultants shall make formal presentations, coordinated by the client, at key milestones on the (a) proposed work plan after submitting the Inception Report; (b) recommendations from the environmental screening; and (c) ESIA findings, design and ESMP recommendations. All supporting information gathered by the consultant in undertaking these terms of reference would be made available to the client.

xi. ***Consultant's Outputs:*** The consultant is expected to provide the outputs, as per the schedule given in the ToR. The Consultants are expected to allocate resources, such as for surveys, keeping this output schedule in mind.

6 GENERIC TOR FOR ENVIRONMENTAL AND SOCIAL AUDIT

6.1 Need for Environmental and Social Audit

It is important to recognize that the World Bank Operational Policies require that the Environmental and Social Assessments (ESA) of private sector projects, financed by Financial Intermediary Loan (FIL) institutions undergo the same rigorous treatment, as in case of regular public sector investment projects. However, it is practically unachievable. In public sector projects, the Bank is involved from the inception of the project and goes along in all the stages from project identification, feasibility study, tendering, evaluation, award of contract, financing and construction in the continuum of project development stages, as given in Policy and Strategy for Public-Private Partnership (PPP), 2010. But in a (PPP) project, the Bank or a Participating Financial Institution (PFI) comes in the project scene only at the time of financing. The Bank or the PFI enters into the project life when much of the Environmental and Social Assessment (ESA) activities have been completed. As such it cannot control these activities and can only make a due diligence on the past activities, to ensure compliance.

After the environmental and social impact assessment study report has been approved it is imperative to take all practical measures to ensure the implementation of the environmental and social management plan by carrying out a auditing study on a regular basis (recommended once a year) and ensuring that the criteria used for the audit is based on the environmental and social management plan (ESMP) developed during the environmental and social impact assessment process.

An environmental social audit shall be done through an external agency in accordance with the terms of reference set in consultation with the IE, PFI and Bangladesh Bank. The environmental social audit shall be conducted by a qualified and authorized environmental and social auditor or inspector who shall be an expert or a firm of experts approved by Bangladesh Bank.

6.2 Objectives

The objectives of environmental and social audit will be to appraise project activities, specially taking into account environmental and social regulatory frameworks, environmental standards, environmental health and safety measures and sustainable use of natural resources. The objectives are outlined as

i. to ensure compliance with the World Bank and DOE environmental and social requirements as identified in section 1.11 to 1.16 of this ESMF;

ii. to identify any environmental and social issues associated with a particular project;

iii. to identify and evaluate the financial implications related to environmental and social issues;

iv. to minimise exposure to financial risks associated with these issues;

v. to maximise opportunities for environmental or social benefits and minimise the potential for adverse environmental and social impacts (such as pollution or accidents) associated with project;

vi. to facilitating management control of environmental practices

vii. to exploring improvement opportunities

An Environmental Social Audit will be typically categorized as - pre-audit, on-site audit and post audit.

6.3 Scope and Impact of Environmental and Social Audit

The audit must be carried out on existing facilities which focuses broadly on two elements:

(a) Compliance of existing facilities and operations with relevant environmental (including occupational health and safety) and social laws, regulations, and applicable IFC and World Bank policies" requirements (ref. Section 1.11 -1.16); and

(b) The nature and extent of environmental and/or social impacts, including contamination to soils, groundwater, and structures, as a result of past/ on-going activities and proposed transactions.

The scope and depth of the audit or review should be commensurate to potential impacts and type of transactions. PFI /IE may propose financing from IPFF facility either from

i. an entity which is already in operation (in this case refinancing proposal from IPFF) or

ii. a new project awaiting financial closure.

In case of refinancing, Environmental and Social Audit will be taken as part of due diligence assessment on a potential IPFF investment and the audit must evaluate current performance and management commitments (including ESMP, Health and Safety Plan, grievance mechanism, stakeholder engagement and communications, and all other programs and commitments as applicable) to the ESMF requirements for IPFF subprojects, and identify gaps against these requirements and necessary corrective actions / gap filling measures in order to ensure compliance.

A corrective Action Plan will be developed if the environmental and social impact audit or review finds that negative but manageable impacts may occur as a result of continuing implementation of on-going activities or new implementation of proposed transactions. The Action Plan may call for preparation and implementation of an ESIA, an IEE, an Environmental and Social Management Plan (ESMP) as relevant, to address the impacts that are identified based on the audit.

The Action Plan should also include measures to inform potentially affected people of the nature of transactions, potential impacts, mitigations measures and grievance mechanisms. The Action Plan should be attached to the loan proposal and the assessment and verification for compliance with the proposed actions, the ESMS of relevant PFIs, and this ESMF is a condition of loan/transaction approval.

6.4 Pre-audit activities

The pre audit activity aims to develop an audit plan for the on-site activities and to make the necessary preparation and arrangements for the on-site audit. The tasks at this stage are to

a) indicate the objective, scope and criteria of the audit;

b) develop an audit plan for the on-site activities;

c) prepare audit questionnaire;

d) review background information

- Site layout plan(s);
- Site history, use and activities;
- Organizational structure at audit site;
- Internal environmental policies, procedures and guidelines.

e) review operational information

- operational activities and process description;
- Management system policies, procedure and program documentation;
- Relevant records (compliance, monitoring, training, maintenance, calibration etc.);
- Other relevant information pertaining to environmental management practices.

f) Conduct initial site visit

- Meet with officer-in-charge to explain purpose of audit;
- Assess whether background information gathered is up to date and accurate;
- Follow-up on the list of preliminary audit impressions;
- Identify and request additional site information as necessary;
- Confirm thoroughness of audit scope;
- Establish adequacy of resources for audit.

g) Develop on-site questionnaire and audit protocols

h) Review Audit Plan and arrange logistics

- Audit scope;
- Audit schedule;
- Audit protocols;
- Allocated resources.

6.5 On-site Audit Activities

The on-site audit objectives should reflect those of the environmental and social audit, which are:

a) Verification of legislative and regulatory compliance

b) Assessment of internal policy and procedural conformance

c) Establishment of current practice status

d) Identification of improvement opportunities

e) Conduct on-site meeting

- Present audit scope and objectives;
- Outline the audit approach and methodology;
- Address questions or concerns of site personnel;
- Rally staff support and assistance.

f) Document Review

- Management policy;
- Management system documentation;
- Operational procedures;
- Records (utility, inventory, monitoring, calibration, transportation, training etc.);
- Previous audit reports.

g) Conduct detailed site inspections with aid of on-site audit protocols to look for evidence on:

- Verification of legislative and regulatory compliance;
- Assessment of internal policy and procedural conformance;
- Establishment of current practice status;
- Identification of improvement opportunities;
- Status of operational practice;
- Staff participation in management system.

h) Conduct Staff Interview to obtain information on

- Actual practices (current and past);
- Compliance with/or deviation from statutory and departmental requirements;
- Awareness of requirements and expectations.

i) Review Audit Evidence to ensure adequacy of audit evidence at the conclusion of onsite audit by:

- Reviewing information gathered;
- Collecting additional information as needed;
- Substantiating audit findings;
- Summarizing and documenting all findings and observations;
- Identifying issues requiring immediate attention/mitigation
- Noting outstanding issues requiring follow-up.

j) Conduct closing meeting: The closing meeting provides an opportunity at the conclusion of on-site audit to:

- Debrief the senior site management;
- Summarize the audit activities and findings;
- Highlight system strengths and weaknesses;
- Discuss preliminary findings and recommended corrective action;
- Bring up findings requiring immediate attention;
- Clarify any outstanding issues;
- Address staff questions or concerns.

6.6 Post audit activities

The post audit activity aims to produce an Audit Report with audit findings and recommendations and to contribute towards formulation of an Action Plan for continual performance improvement. The activities will be as follows:

a) Collate information and follow up outstanding issues

Information to be organized should include

- Completed pre-audit questionnaire, operational document checklists;
- Completed on-site survey questionnaires, on-site audit protocols;
- All relevant correspondence, memoranda, reports, diagrams and drawings;
- Copies of records, photographs, and other information collected during the site visit;
- Detailed inspection and interview notes and summaries.

6.7 Audit Imperatives

The environmental and social audit imperatives are enumerated as follows:

a) management practice assess compliance with all relevant environmental law and social regulatory frameworks on health and safety, sustainable use of natural resources and acceptable national and internal standards;

b) verify the levels of compliance by the proponent with the conditions of the environmental and social management plan;

c) review existing project documentation related to all infrastructural facilities and designs;

d) examine monitoring programs, parameters, and procedures in place for control and corrective actions in case of emergencies;

e) examine records of incidents and accidents and the likelihood of future occurrence of the incidents and accidents;

f) examine and seek views on health and safety issues from the project employees , the local and other potentially affected communities.

6.8 Outline of the Audit Report:

An audit report shall include but shall not be limited to the following information:

a) An Executive Summary

b) Introduction and Background of the Audit

c) Audit Scope and Objective

d) Description of Audit Approach and Methodology

e) Summary of Audit Finding

- the past and present impacts of the project;
- the responsibility and proficiency of the operators of the project;
- existing internal control mechanisms to identify and mitigate activities with a negative environmental impact;
- existing internal control mechanisms to ensure the workers‟ health and safety; and
- the existence of environmental and social awareness and sensitization measures, including environmental standards, and regulations, law and policy, for the managerial and operational personnel.

f) Recommendations and Conclusions

Conducting an environmental and social audit is not an option but a sound precaution and a proactive measure in today‟s heavily regulated environment. The project proponent/ Executing Agency has a valuable role to play, encouraging systematic incorporation of environmental perspectives into many aspects of an organization‟s overall operation, helping to trigger new awareness and new priorities in policies and practices.

7 SAMPLE OUTLINE OF ESIA/ESMP

ESIA-ESMP report should be based on maximum rated capacity of the project, technology, equipment, manpower, resource use, etc.

An example outline for a full ESIA for a port project, Chapter wise, is prescribed below.

i. Executive Summary (generally no more than 10-15 pages)

ii. Introduction

This chapter should cover:

a. Project Background.

b. Purpose of the Study, Project, Project Proponent, brief description of the project- name, nature, size.

c. Need for the Project.

d. Location of the project- land description, extent of the land, plot/ survey nos./ village, upazilla & district.

e. Importance of the Project to the Region & Country.

f. Scope of the ESIA Study

g. Disclosure of ESIA Team.

Essential Maps to be Provided

h. A map specifying location of the site, district and the Country (Index Map).

i. A map of project area and 10 km area from boundary of the proposed/existing project area, / international boundaries.

j. A map covering aerial distance of 25 km from the project site boundary delineating environmental sensitive areas.

k. Boundaries of the proposed site shall be shown therein with latitude and longitude.

l. Area drainage contour map of the project area.

m. Land use map of the study area to 1: 50,000 scale based on recent satellite imagery of the project area and 10 km from the proposed project boundary delineating the cropping pattern, wastelands, forest area, built-up areas, water bodies, human habitation and other surface features such as roads/National Highways, railway lines, ports, airports, major industries etc.

iii. Legal & Legislative Frameworks

a. The proponent should confirm that the project meets the environmental regulations and standards applicable for the project.

b. Any litigation pending against the proposed project and/ or any direction/ order passed by any court of law against the project, if so, details thereof.

iv. Project Proponent

a. Profile of the project proponent, name and contact address with e-mail.

b. Implementing organization, organizational chart, project consultants, etc.

c. Project Concept & Components.

d. Project Schedule.

v. Project Description

This chapter should cover the broader details of the basic activities, layout and implementation schedule of the project.

a. Type of the project- new/expansion, etc.

b. Relevance of the project in the light of the existing development plans of the region.

c. Project coverage, master plan, phasing and scope.

d. Description of a project site, geology, topography, transport and connectivity, demographic aspects, socio, cultural and economic aspects.

e. Capacity of the project, equipments, ancillary operations, housing, parking details, etc.

f. Technologies involved for design, construction, equipment and operation.

g. Use of existing infrastructures – road, railway and inland waterway net works, water supply, electrical power, etc.

h. Water budget - during construction/ operation stages.

i. Estimated cost of development of the project, environmental cost, rehabilitation of communities / villages present status of such activities.

j. Resources, manpower and time frame, etc. –required for project implementation.

k. Structural Environmental Management/Pollution Mitigation Measures that are part of project design.

Essential Maps to be Provided

a. Site lay out plan of the proposed development shall be submitted by clearly marking the layout of the proposed facility as well as showing all supporting and ancillary infrastructure, such as warehouses, workshops, roads, effluent disposal point, water treatment plant, administrative and operational buildings, utilities, town ships / workers‟ residences, greenbelt, dredged material disposal sites, etc.

vi. Analysis of Alternatives (Technology, Sites, and “without project” option)

a. Description of various alternatives like locations or layouts or technologies studied.

b. Description of each alternative.

c. Consideration of the "without project" alternative.

d. Selection of alternative and justification.

vii. Description of the Environment

Study Area: As a primary requirement of ESIA process, the proponent should collect primary baseline data in the project area of influence as well as in the area falling 10 km aerial distance from the project boundary.

The study areas for different environmental attributes (water, air, noise, soil, etc.) is to be submitted considering the proposed activities and location, along with proper reasoning, for review and approval.

viii. Land Environment

a. Availability of land for earmarking for the Project without causing a due hardship to local habitat and their socio cultural and economic aspects.

b. Justification for the proposed quantum of the area is to be given.

c. Study of land use pattern, habitation, cropping pattern, forest cover, environmentally sensitive places, etc, by employing remote sensing techniques and also through secondary data sources.

ix. Topography

Baseline data to be given on description of existing status of the land at the project area including description of slopes/ inland topography, features (lowland, littoral areas, shoal areas), terrain features, slope and elevation.

x. Geology

a. Baseline data to be provided on rock types, regional tectonic setting (reported fractures/faulting, folding, warping), history of any volcanic activity, seismicity and associated hazards, mainly in the Project & Coastal area.

b. Information on quarry yields, strengths of rock, distance of quarries from habitat, restrictions for quarrying, environmental controls, statutory permissions, etc., should be provided.

xi. Soil

a. Soil data including type, classification, characteristics, soil properties, etc., are important from engineering considerations for design of structures, loading capacities of cargo stockpiles, green belt development etc.

b. Changes in parameters of soil also may affect plantation and vegetative growth which in turn may endanger the health of local habitat.

c. Baseline data of the soil, results of investigations carried out to be provided.

xii. Water Environment

a. Ground Water

Baseline data of ground water including data of pH, dissolved solids,

suspended solids, BOD, DO, coli-form bacteria, oil, heavy metals, etc. is to be collected at least for one season. Usage purpose of the ground water, if any, is to be indicated.

b. Surface Water

Baseline data on location of surface water like lagoons, lakes, tidal inlets, streams, rivers, their details, present quality and their utility, if any, is to be provided. Details of water bodies in the project area shall be described specifically. Water quality is to be monitored for one season.

xiii. Marine Environment

a. Hydrology/Geomorphology

Hydrology requires collection of oceanographic data during the study period, covering the following parameters:

- Tides
- Waves (wind waves and swells)
- Storm surges
- Currents
- Salinity
- Sea water temperature
- Suspended load, and
- Seabed bathymetry.

Baseline oceanographic data should extend at least to depths more than 10 m of proposed deepening of the harbor approach and basin as proposed. A study on likely changes in the sediment transport and littoral drift due to the construction of port should to be taken up.

Details of mangroves, marshes and other vegetation, sand dunes, stability, seismic characteristics, history of any endangered species, river bank/coastal erosion and shoreline changes should be furnished.

b. Bed Sediment Contamination

Baseline data on bottom sediments and the associated bottom biota and other physical habitat, at the project area and the neighborhood areas has to be collected and analyzed.

xiv. Biological Environment

a. Ecology

- Baseline data of both terrestrial and aquatic flora and fauna at the project area is to be ascertained by proper surveys including mangroves and marshes and other inland waters & coastal vegetation, etc.
- Data on rare & endangered species are also necessary.
- Flora-Fauna Status & Species Diversity shall be included.

a. Flora and Fauna

Details on secondary data on the existing flora and fauna in the study area shall be carried out along with classification as per Schedule**.**

xv. Air Environment

a. Meteorological Data

Meteorological data for at least a 10 year period should be presented from the nearest meteorological station, except for the history of cyclones and tidal surges for which 100 year data is required. The list of Meteorological parameters includes: Wind speed and direction (Wind Rose diagrams), Temperature, Relative humidity, Barometric pressures, Rainfall, History of cyclones, etc.

b. Ambient Air Quality

Baseline data of ambient air parameters namely particulate matter size less than 2.5 um or PM2.5 (in ug/m3), particulate matter size less than 10 um or PM10 (ug/m3), sulphur dioxide (ug/m3), nitrogen dioxide (ug/m3), ozone (ug/m3), carbon monoxide (mg/m3), heavy metals (Particulate Lead; ug/m3) shall be monitored. One season data should be monitored other than monsoon. At least one station should be in the up-wind/ non-impact/ non-polluting area as a control station and one station in down wind direction.

xvi. Noise Levels

Baseline data on noise levels at the project area and the neighborhood areas is to be monitored and reported with applicable Noise Standards.

xvii. Socio-Economics and Occupational Health Environment

Baseline data at the project area shall include the demography, particularly on human settlements, health status of the communities, existing infrastructure facilities in the Project area and area of impact due to the proposed activity. Present employment and livelihood of these populations, awareness of the population about the proposed activity shall also be included.

xviii. Public Utilities

Base line data of existing public utility infrastructure shall be ascertained and reported to assess the impact of the project on these public utilities in order to incorporate desired methods in the EMP and monitor the same during the construction as well as operational phases of the Project.

xix. Anticipated Environmental Impact and Mitigation Measures

This Chapter should describe the likely impact of the project on each of the environmental parameters, methods adopted for assessing the impact such as model studies, empirical methods, reference to existing similar situations, reference to previous studies, details of mitigation methods proposed to reduce adverse effects of the project, best environmental practices and conservation of natural resources.

The identification of specific impact followed with mitigation measures should be done for different stages i.e., Construction Phase (including dredging) and Operation Phase (ship traffic including discharges from vessels and cargo operations).

a. Land Environment

Anticipated Impacts:

- Impact of project construction/operation on the land requirement / land use pattern should be assessed.
- Effect of future growth of the port facility and/or of the ancillaries should be carefully assessed. Impact on the public utilities arising out of the utilities for the project activities and impact on the natural drainage system shall be assessed.
- Prediction of impact should include impact on the existing infrastructures like road networks, housing, ground water/surface waters, etc. and loss of productive soil (if any) and impact on the natural drainage pattern.

Mitigation Measures:

- Mitigation measures to reduce adverse effects like adopting soil improvement techniques and adopting suitable design methods to reduce land requirement.
- Strengthening of road and rail network infrastructure to handle the increase in traffic and truck parking arrangements, integration of Port development with the local land use plan should be planned.

a. Topography, Geology and Soil

Anticipated Impacts:

- Impact of construction/operation on the topography due to activities like large scale quarrying, filling of low lying area with dredged spoils and borrowed material, damage to existing vegetation/green belt and plantation, changes in land use patterns, disturbance to existing protected areas like mangroves, forests and environmentally sensitive areas/zones should be assessed.
- Flooding due to filling up of low-lying areas should be assessed.
- Impact on the surrounding land use pattern, on infrastructure like housing, ground water, etc should be assessed.
- Impact of the project construction on the geology and vice-versa should to be studied in detail.
- Impact of project construction/operation on the soil parameters, probability of settlement, subsidence, slides, surface drainage, leachets etc., are to be assessed and addressed.

Mitigation Measures:

- Mitigation measures to reduce adverse effects include improving green belt, obtaining construction materials from other sources, usage of alternative construction materials like fly ash, where possible, storm water management, etc.
- Adopting soil improvement techniques and suitable designs, ground covering, etc.

b. Water Environment

Anticipated Impact:

- Impact of operations on surface waters, contamination due to cargo operations, impact on utility of surface water resources by the neighboring colonies, impact on surface water flow (ex. flooding) due to anticipated alterations/obstructions, etc.
- Discharge of trade effluent/sewage and its impact.
- Impact of project construction/operation on the ground water on account of leachets, run off from material and cargo storages and toxic or harmful substances, percolation, etc.

Mitigation Measures:

- Protection measures to surface water resources to prevent reduction in their quality due to construction and operational activities.
- Proposals to treat effluents confirming to standards notified under EC Act should be submitted.
- Mitigation measures to reduce adverse effects like impervious paving the cargo areas, impervious roads, lined drains, routing surface drainage to settlement tanks/pits, etc.
- Treatment of effluent, recycle/ reuse and disposal should be planned.
- Groundwater study on leaches should be carried out periodically and should be correlated with baseline data.
- Remedial measures should be taken in case of any deviation.
- Based on the total water budget of the project, the use of ground water should to be reviewed and alternatives to be presented.

c. Hydrology

Anticipated impact:

Impact of the project construction/operation on the hydrology on account of port construction should be assessed by suitable model studies.

Mitigation measures:

- Careful port design should be planned to minimize impact due to changes in current patterns and other hydrology.

- Model experiments or computer simulations of these changes are useful in developing an appropriate design.
- Shore protection works like construction of sea walls, sand bye passing or bank nourishment should be studied.

d. Sediment Contamination

Anticipated Impact:

Impact of the project construction/operation on the bed sediment contamination on account of port construction/operations is to be assessed by suitable empirical/model studies.

Mitigation Measures:

A survey of contamination of bottom sediments should be undertaken before dredging.

a. Biological Environment

Anticipated impact:

- Impact of the project construction/operation on the river/marine/coastal ecology on account of port construction should be assessed by suitable empirical/model studies.
- Impact due to floodlights on the species should be studied.

Mitigation Measures:

Mitigation measures to reduce adverse effects should be provided.

a. Air Environment

Anticipated Impact:

- Impact of project construction/operation on the ambient air quality on account of emissions of dust during construction and cargo handling as well as emission of gases from equipment deployed for construction and cargo handling should be assessed.
- Prediction due to emissions during cargo handling/ emissions from the ships in the port area/ emissions due to increased traffic, emission inventory for critical pollutants with and without mitigation measures, prediction of the impact due to the existing activity on the proposed project, prediction of impact due to on going projects in the surrounding area on the proposed project and the ambient environment shall be carried out.

Mitigation Measures:

- Mitigation measures proposed during the construction stage should include dust suppression measures by suitable techniques.
- Mitigation measures proposed during the operation stage should include alternative solutions such as closed conveyor system, closed silos, closed vehicles to transport dusty cargo, etc, mitigation measures

to lower the emissions from the ships and green belt development.

a. Noise Pollution

Anticipated Impact:

Impact of project construction/operation on the noise and vibration on account of construction equipment, cargo handling equipment and road traffic.

Mitigation Measures:

Mitigation measures to comply the norms should be planned..

a. Solid Waste Management

Anticipated Impact:

- Details of municipal solid waste facilities, biomedical treatment facilities and hazardous waste disposal facilities in the area should be inventorized, in case if it is proposed to utilize the same.
- Impact due to non-hazardous and hazardous solid waste generated during the construction and operational stages should be assessed.

Mitigation Measures:

- Mitigation measures to comply the norms should be planned.
- Options for minimization of solid waste and environmentally compactable disposal/ recycling of waste to
- Conservation of natural resources should be planned.
- Management and disposal of temporary structures made during construction phase should be planned.

a. Socio-Economic and Occupational Health Environment Anticipated Impact:

- Predicted impact on the communities of the proposed activity.
- Present status of health, housing, public utilities, commercial structures and transportation should be collected.
- Impact of the project on socio cultural aspects should be assessed.
- Socio-economic impact due to displacement of fishing settlements (if any) and population influx due to increased activities should be assessed.

Mitigation Measures:

- Mitigation measures to reduce adverse effects including satisfactory RAP methods should be planned.

xx. Additional Studies

Risk Assessment, Risk Mitigation Measures, Disaster Management Plan, etc. shall be prepared and submitted.

xxi. Environmental Cost Benefit Analysis

If recommended at the scoping stage, this chapter shall be included for the environmental cost benefit analysis of the project.

xxii. Environmental Management Plan (EMP)

- EMP for Construction Phase : Land Environment, Water Environment, Air Quality, Noise Levels, Biological Environment and Socioeconomics.
- EMP for Operation Phase : Land Environment, Water Environment, Air Quality, Noise Levels, Biological Environment and Socioeconomics.
- Occupational Health & Safety Measures.
- Green Belt Development.
- Rain Water Harvesting Measures.
- Project Cost & EMP Budget.
- CSR Budget.
- EMP Cell for Implementation of proposed EMP Measures.

xxiii. Environmental Monitoring Programme

This Chapter shall include details of environmental monitoring programme. It should include the technical aspects of monitoring the effectiveness of mitigation measures (including measurement methodologies, data analysis, reporting schedules, emergency procedures, detailed budget & procurement schedules).

xxiv. Project Benefits

This chapter shall include benefits accruing to the locality, neighborhood, region and nation as a whole. It should bring out details of benefits by way of:

- Improvements in the physical infrastructure by way addition of project infrastructure, ancillary industries that may come up on account of the project.
- Improvements in the social infrastructure like roads, railways, townships, housing, water supply, electrical power, drainage, educational institutions, hospitals, etc.
- Employment potential –skilled; semi-skilled and unskilled, both during construction and operational phases of the project with specific attention to employment potential of local population as well as necessity for imparting any specialized skills to them to be eligible for such employment in the project on a long term basis and Other tangible benefits like improved standards of living, health, education etc.

xxv. Public Consultation

The Public Consultations, both at Local and National Level**,** have to be conducted and the Proceedings, Issues raised, Response & Action Plan to address the Public Issues are to be prepared and disclosed.

xxvi. Institutional Assessment and Capacity Building

Assessment of the institutional capacity of the implementing agency and measures for capacity-filling gaps for ESMF implementation is particularly important and need to be incorporated in the ESIA. Moreover, IE has to prepare a plan to carryout capacity building/training on environmental and social aspects. The capacity building includes the process of equipping individuals with the understanding, skills and access to information and knowledge that enables them to perform effectively particularly in carrying out the activities pertaining to environmental and social management in line with ESMF.

xxvii. Conclusion

A conclusion which summarizes the main findings of the report is presented in a clear and concise manner.

7.1 Guidance on the Content of RAP

(**This is only a general sample for Power Transmission Project;** every project has its own specificities)

Chapter No.	Chapter & Description
	Table of Content
	Executive Summary
	Abbreviations
Chapter 1	**Introduction**
1.1	Background of the Report
1.2	Objectives of the SIA/ RAP Study
1.3	Scope of Work
1.4	Limitations
1.5	The SIA/ RAP study team
1.6	Methodology
1.7	Structure of the Report
Chapter 2	**Policies and Guidelines**
2.1	Overview
2.2	Policies regarding construction of power transmission lines **i.** The Electricity Act (1910) **ii.** Building Construction (Amendment) Act, 1990 and Building Construction Rules '1996 **iii.** Power Policy, 1995 **iv.** Energy Policy (1996) **v.** Industrial Policy (1999)
2.3	Policies regarding land acquisition/ requisition and development **i.** The Acquisition and Requisition of Immovable Property Ordinance, 1982 World Bank Directives regarding RAP
Chapter 3	**Description of the project**
3.1	Major Components of the Project

Chapter No.	Chapter & Description
6.4	Consultation with Govt. Organizations, Industries and Real Estate Companies
6.5	Disclosure Plan
Chapter 7	**Resettlement Action Plan**
7.1	The project and the scope of resettlement
7.2	Objective and Policy Frame
7. 3	Findings of Socio-economic Survey of PAP Households (Tower) i. Identification of PAPs/PAHs and Losses, PAP/PAH survey for Towers ii. Summary of the socio-economic information of the tower sites Migration status Population, Age and Sex Structures
7.4	Findings of socio-economic survey of the ROW7. i. Socio-economic profile of population and households along the entire ROW ii. Settlement and Infrastructures in the ROW
7.5	Approach and Operational Framework i. Approach ii. Operational framework iii. Definitions
7.6	Impact of the Project Sites i. Project Affected Entities ii. Loss of Buildings and Structures within 20 m area iii. Loss of Land iv. Loss of Trees v. Affected Households vi. Loss of Income by Affected Households vii. Loss of Community Resources (Roads)
7.7	Impact of the Project on the ROW
7.8	Entitlement Framework
7.9	Social Impact Management

Annex A: List of Industries/Projects under Different Categories as per ECR 1997

Schedule - 1

Classification of Different Industrial Units or Project

Based on Impact & Location

[(vide Rule 7 (2)]

A. Green Category

1. TV, Radio, etc. Assembly & Manufacture
2. Watch Manufacture & Assembly
3. Telephone Assembly
4. Toy Manufacture Assembly
5. Book Binding
6. Rope, Mat, Floor Mat (Cotton, Jute & synthetic)
7. Photography (except cinematography & x-ray)
8. Imitation Leather Product
9. Motor Cycle, Bicycle, Toy Bicycle Assembly
10. Scientific & Mathematical Instrument Assembly (except manufacture
11. Musical Instrument
12. Sports Goods (except plastic products)
13. Tea Packaging (except processing)
14. Powder Milk Repacking (except manufacture)
15. Bamboo & Cane Product-,
16. Artificial Flower (except plastic)
17. Pen & Ball Pen
18. Jewellery (shop only, except manufacture)
19. Candle
20. Medical & Surgical Goods (except manufacture)
21. Cork Product Manufacturing plant (except metal product
22. Laundry (except washing)

Note.

1 All Cottage Industries in industrial schedule except those listed above shall be outside Envirnmental Clearance requirement (Cottage Industry means industrial manufacture or service by full or part time work of family members and limited to investment ceiling of TK. 500, 000 only);

2 No industry listed above may be located in residential area.

3 As far as possible location of industrial unit in industrialised or designated industrial area or moderately open space is desirable.

4 Location of industrial unit likely to emit it unacceptable limit of noise, smoker or bad odor in commercial area is not permissible.

B. Orange A Category

1. Cattle Farm (below 10 animals in city & below 20 in rural area)
2. Poultry (upto 250 birds in city & 1000 in rural area)
3. Whole Flour, Rice, Turmeric, Pepper Milling. Pulse Grinding/Milling upto 20 horse power)
4. Weaving & Handloom
5. Shoe & Leather Goods Manufacture (upto capital of" fk. 500,000)
6. Saw Mill
7. Wood, Iron/Steel, Aluminium etc. Furniture (upto capital of Tk. 500,000).
8. Printing; Press
9. Plastic & Rubber Goods (except I'VC)
10. Restaurant
11. Carton/Box Manufacture/printing & Packaging
12. Cinema Hall
13. Dry Cleaning
14. Imitation Leather Goods Manufacture (upto capital of Tk, 500.000),
15. Sports Goods
16. Salt. Manufacture (upto capital of Tk. 1000,000)
17. Agriculture Machinery & Equipment
18. Industrial Machinery & Equipment.
19. Jewelry Manufacture
20. Pin, Gem Clip
21. Spectacles' Frame
22. Comb
23. Brass, Bronze, Utensil, Souvenir Manufacture
24. Biscuit & Bread Manufacturing Plant (upto capital of Tk. 500,000).
25. Chocolate & Lozenge Manufacturing Plant (upto capital of Tk. 500,000).
26. Wooden, Boat Building.

C. Orange B Category

1. PVC Products
2. Synthetic Fiber (Raw Material)
3. Glass Factory
4. Life Saving Drug (applicable to formulation only)
5. Edible Oil
6. Coat Tar
7. Jute Mill
8. Hotel, Multistory Commercial & Apartment Building
9. Foundry
10. Aluminium Product
11. Glue (except animal glue)
12. Brick/Tile
13. Lime
14. Plastic Product
15. Bottling Potable Water, Soft Carbonated Drink Manufacture & Bottling
16. Galvanising
17. Perfume, Cosmetics
18. Flour (large)
19. Carbon Rod
20. Stone Crushing, Cutting, Grinding
21. Fish, Meat, Food Processing
22. Printing & Writing Ink
23. Animal Feed
24. Ice Cream
25. Clinic & Pathology Laboratory
26. Clay, China clay, Crockery, Sanitary ware (ceramic)
27. Shrimp Processing
28. Water Treatment Plant
29. Metal Utensil/Spoon etc.
30. Sodium Silicate
31. Match
32. Starch & Glucose
33. Cattle Feed
34. Automatic Rice Mill
35. Motor Vehicle Assembly
36. Wooden Vessel Manufacture
37. Photography (X-ray & cinematography film studio work)

38. Tea Processing
39. Powder Milk, Condensed Milk, Dairy
40. Steel Rerolling
41. Wood Treatment
42. Soap
43. Refrigerator Repair
44. Metal & Machine Repair Shop
45. Engineering Workshop (upto capital of Tk. 1000000)
46. Spinning Mill
47. Electrical Cable
48. Cold Storage
49. Tyre Retreading
50. Motor Vehicle Repair Workshop (upto capital of Tk. 1000,000).
51. Cattle Farm, above 10 animals in city & above 20 in rural area
52. Poultry (above 250 birds in city & 1000 in rural area)
53. Whale Flour, Rice, Turmeric, Pepper Milling, Pulse Milling/Grinding (above 20 Horse Power)
54. Shoe, Leather Goods Manufacture (above capital of Tk, 500,000).
55. Wood, Iron/Steel, Aluminum etc. Furniture (above capital of Tk. 500,000).
56. Imitation Leather Goods Manufacture (above capital of Tk. 500,000)
57. Salt Manufacture (above capital of Tk. 100,000).
58. Biscuit & Bread Manufacturing Plant (above capital of Tk. 500,000).
59. Chocolate & Lozenge Manufacturing Plant (above capital of Tk. 500,000).
60. Clothing, Sweater Manufacturing
61. Apparel Washing
62. Power Loom
63. Road construction/Reconstruction/Extension (feeder road, local street)
64. Bridge construction/Reconstruction/Extension (below 100 meter length)
65. Public Toilet
66. Ship Breaking

67. G I Wire
68. Battery Assembly
69. Dairy & Food

Note:- *1) No industry listed above should be located in residential area*

2) As far as possible location of *industrial unit in industrialised, or designated industrial area or moderately open space is desirable.*

3) Location of *industrial unit likely to emit unacceptable limit* of *noise, smoke, bad odor in commercial area is not permissible.*

D. Red Category

1. Leather Processing (tannery)
2. Formaldehyde
3. Urea Fertilizer
4. TSP Fertilizer
5. Chemical Paint, Polish, Varnish, Enamel
6. Power Plant
7. All Mineral Projects (Coal, limestone, hard rock, natural gas, petroleum etc.)
8. Cement
9. Oil Refinery
10. Synthetic Rubber
11. Paper & Pulp
12. Sugar
13. Distillery
14. Fabric Dyeing & Chemical Treatment
15. Caustic Soda, Potash
16. Other Alkali
17. Iron & Steel Plant
18. Pharmaceutical Raw Materials, Basic Medicine
19. Electroplating
20. Photo Film, Paper & Chemical
21. Manufacture of Miscellaneous Products from Coal & Petroleum
22. Explosive
23. Acids & their Salts (Organic, Inorganic)
24. Nitrogen Compounds (cyanide, cyanamide etc.)
25. Plastic Raw Material Manufacture (PVC, PP/Steel, Polystyrene etc.)
26. Asbestos

27. Fiber glass
28. Insecticide, Fungicide & Pesticide
29. Phosphorus & its compounds
30. Chlorine, Fluorine, Bromine, Iodine & their compounds
31. Industrial gases (except nitrogen/oxygen & carbon dioxide)
32. Waste Insecticide
33. Other Chemicals
34. Arms
35. Nuclear Power
36. Liquor
37. Other Non-metallic Chemicals not mentioned above
38. Other Non-metals not mentioned above
39. Industrial Estate
40. Basic Industrial Chemicals
41. Non-ferrous Metal elements
42. Detergent
43. Earth Filling, Industrial/ Domestic/Commercial waste
44. Sewerage Treatment Plant
45. Life saving Drug
46. Animal Glue
47. Rat Filler
48. Refractories
49. industrial Gases (Oxygen, Nitrogen & Carbon dioxide)
50. Battery
51. Hospital
52. Ship Building
53. Tobacco processing Cigarette/Biri Manufacture
54. Metal Body Vessel Building
55. Wooden Body Vessel building
56. Refrigerator/ Air conditioner/ Air cooler manufacture
57. Tyre & Tube
58. Board Mill
59. Carpet

60. Engineering Workshop, above capital of Tk. 1,000,000
61. Motor Vehicle Repair Workshop, above capital of Tk. 1,000,000
62. Water Treatment Plant
63. Sewerage Pipeline laying/re-laying/extension
64. Water, Electricity, Gas Distribution System construction/re-construction/ extension
65. Mineral Resources exploration/mining/distribution
66. Flood Control Dam, Polder, Dike etc. construction/reconstruction/extension (regional. national & international)
67. Road construction/reconstruction/Extension (regional, national & international)
68. Bridge construction/reconstruction/extension (width 100 meters or over)
69. Murate of Potash (manufacturing)

Note:

1 *No industry listed above may, be located in residential area*

2 *As far as possible, location of industrial unit in industrialised, or designated industrial area, or moderately open space is desirable.*

3 *Location of industrial unit likely to emit unacceptable limit of noise, smoke, bad odor is not permissible.*

4 *After obtaining Location Clearance based on IEE Report, the EIA Report including time Frame and ETP Diagram have to be submitted subsequently as per approved programme outline.*

Annex B: Environmental and Social Screening Checklist

Environmental and Social Screening Checklist

The purpose of this checklist is to identify potential environment and social issues related to project development, construction and operation. This is a generalized checklist (non-exhaustive) format for infrastructure project. The user/ project proponent may fill-up the format, which may be reviewed by an Environmental Professional to categorize the project.

(A) Project Background

1.	Name of Proposed Project	
2.	Location	
3.	Project objective	
4.	Capacity or size of the Project	
5.	Proposed date of commencement of work	
6.	Proposed construction period	
7.	Sector	
8.	Executing Agency	

(B) Environmental and Social Screening of Project

Sl. No	Screening Questions	Yes	No	Possible Negative Environmental Impact/ Comments
	Potential Environmental Impacts Sub-project implementation.			
1.	Will the renovation work disturb other academic/hospital/residential activities?			
2.	Project‟s sitting: Is the Project site adjacent to or within any of the following environmental sensitive areas?			In the case select "yes", describe detailed information such as: name of historical property, natural resource, nearest distance from the Sensitive area to the Project site etc...
	i. Cultural heritage site			
	ii. Protected areas			

Sl. No	Screening Questions	Yes	No	Possible Negative Environmental Impact/ Comments
	iii. Wetland			
	iv. Forest			
	v. Estuary			
	vi. Buffer zone of Protected areas			
	vii. Nature reserves like bird yard, mangrove forest etc			
	viii. Rivers and reservoirs			Name of main water bodies (rivers), lakes, reservoirs and nearest distance to the Project site
	ix. Canals and irrigation system			Assess the density of the canal system in the Project‟s area
	x. Agricultural land			
3.	Potential environmental impacts: Will the Project cause:			If select " yes", please describe and briefly assess impact‟s level
	i. Encroachment on historical/cultural areas			
	ii. Encroachment on critical ecosystem (e.g. sensitive or protected area, national park, nature reserve etc....)			
	iii. Disfiguration of landscape and increase waste generation			
	iv. Change of surface water quality or water flows			
	• Increase water turbidity due to run-off and erosion			
	• Waste water from camping sites is directly discharged to the surface water resources or not?			
	• Construction waste is directly discharged to the surface water or not			
4.	Will it create major noise/vibration?			If select " yes", please list of main reasons

Sl. No	Screening Questions	Yes	No	Possible Negative Environmental Impact/ Comments
5.	Will it create dust problem around the sites?			If select " yes", please list of main reasons
6.	Will it temporarily stop the water supply and sanitation system?			
7.	Will any refrigeration/air conditioning units be removed/ disposed?			
8.	Will any liquid waste, or an item containing liquids (including oils), need to be transported off-site for reuse, recycle or disposal?			
9.	Will equipment containing polychlorinated biphenyls (PCB‟s) be removed (i.e. transformers, capacitors, hydraulic and heat transfer systems, etc.)?			
10.	Will building materials containing asbestos be removed/disposed?			
11.	Will any building materials be removed/disposed that are coated with lead-based paint?			
12.	Will any building materials be removed/disposed that contain lead, silver or chrome?			
13.	Will batteries be removed/disposed (lead-acid or nickel-cadmium batteries from emergency lights and other battery-powered or battery-backup items?			
14.	Will mercury-containing devices (switches, gauges, thermostats) be removed/disposed?			
15.	Will an emergency generator set or other aboveground storage tank (AST) be installed or removed?			
16.	Will the workers be provided protective equipment, devices and clothing and be ensured those are used?			

Sl. No	Screening Questions	Yes	No	Possible Negative Environmental Impact/ Comments
17.	Will enough health and safety direction and insurance be provided to the workers?			
18.	Permanent land acquisition			If select " yes", please list of land area for permanent acquisition, type of soils, and purpose of acquisition
19.	Temporary land acquisition			If select " yes", please list of land area for permanent acquisition, type of soils, and purpose of acquisition, duration of acquisition
20.	Is there any household need to be relocated?			If yes, how many households?
21.	Would the resettlement site is environmentally and/or culturally sensitive			If select “yes” briefly describe the potential impacts
22.	Is there any risk of disease dissemination from construction workers to the local peoples (and vice versa)?			Estimated number of groups of workers to be hired for project construction in the commune/ district
23.	Is there any potential for conflict between construction workers and local peoples (and vice versa)?			
24.	Are explosive and hazardous chemicals used within the Project?			If select "yes", please list of these materials
25.	In the past, there was any accident incurred due to landmines or explosive materials remaining from the war?			
26.	Will Project‟s construction cause disturbance to the transportation in the Project‟s site?			If select "yes", please assess the impact level: • Significant impact • Medium impact • Minor
27.	Project‟s construction will cause any damage to the existing local roads system?			
28.	Will soil excavation during Project‟s construction cause soil erosion?			If select "yes", please assess the impact level: • Significant impact

Sl. No	Screening Questions	Yes	No	Possible Negative Environmental Impact/ Comments
				• Medium impact • Minor
29.	Will Project need to open new access roads?			If select "yes", please briefly estimate number of temporary access roads and their locations
30.	Will Project cause fragmentation of habitat of flora and fauna?			If select "yes", please describe
31.	Will Project cause impact on air transportation?			
32.	Will Project cause risk to safety and human health (EMF, electric shock etc.)?			If select “yes” ", please describe

Annex C : Terms of Reference for Environmental and Social Monitoring Consultant

TERMS OF REFERENCE
FOR
ENVIRONMENTAL AND SOCIAL MONITORING CONSULTANT

1. Background

The Government of Bangladesh (GoB) with support from World Bank has taken the Investment Promotion and Financing Facility (IPFF) Project to open a new window for infrastructure financing through private sector participation. The IPFF has made available partial debt financing through private sector financial intermediaries for eligible, government-endorsed infrastructure projects to be developed by private sector. Projects developed solely by the private sector but identified by the Government to be in the public interest are also eligible for financing. The project also seeks to assist the Government of Bangladesh in facilitating new infrastructure projects with potential for private sector participation and in developing the capacity of the financial institutions for the ongoing provisions of infrastructure finance.

The IPFF project has exhausted its first phase allocation amount of $50.00 million ($47.5 million investment and $2.50 million TA for capacity building) in its third year of operation, and considerable excess demand still exists. The initial funds have been used exclusively in the power sector as a matter of priority. Another financial agreement has been signed already between IDA and GOB for additional financing of US$257million which includes US$ 10 million for technical assistance and US$247 million for on lending. The IPFF requires that each investment project be screened for potential environmental and social impacts, and be subjected to appropriate Environmental Assessment. One of the major requirements of IPFF financing is to comply with World Bank Safeguard policies and DOE requirements, which are preceded with the preparation of proper Initial Environmental Examination (IEE) and EIA Reports. An essential part of EIA report is Environmental and Social Management Plan (ESMP), which lays out the mitigation and monitoring plan of the investors. Realizing the importance of the ESMP, the client (i.e., BB) wants to ensure the proper implementation of ESMP.

The BB and IDA approval of the loan to the investor requires that WB safeguards and DOE compliance to be ensured. The investor is responsible for preparing IEE and EIA, and proper implementation of ESMP. IPFF has decided to *engage an environmental monitoring consultant to conduct independent monitoring of the implementation of the ESMP during the construction and operational phases of approved projects (within the tenure of the IPFF project implementation period)*. The investor will need to assist the Consultant with all the required information and assistance in carrying out the services.

The **Bangladesh Environmental Conservation Act,** (1995) is the predominant environmental legislation in Bangladesh. Its main objectives are to control pollution and to promote conservation. The **Environmental Conservation Rules** (1997) are a set of rules, which are developed to cover the environmental regulations for Bangladesh. Environmental compliance in Bangladesh primarily relates to complying with the above act and rules. The World Bank Safeguard Policies (see www.worldbank.org/safeguards) and Environmental, Health and Safety (EHS) Guidelines (see www.ifc.org/ehsguidelines) lay out requirements and standards on environmental, social, health and safety aspects of World Bank financed projects.

The following infrastructure sectors are eligible for financing under IPFF:

(a) power generation, transmission, distribution, renewable energy and services.

(b) port development(sea, river and land) including inland container terminals, inland container depot and other services;

(c) environmental, industrial and solid waste management projects

(d) highways and expressways including mass-transit , bridges, tunnels, flyovers, interchanges, city roads, bus terminals, commercial car parking, etc;

(e) airports, terminals and related aviation facilities;

(f) water supply and distribution, sewerage and drainage;

(g) industrial estates and parks development;

(h) Social Sector (Health, education)

(i) Information Technology

As a reference, below is the list of projects financed to date by IPFF:

Sl.	Name of the Projects	Current Status
1.	22 MW Tangail (gas-fired power plant)	In Operation
2.	22 MW Narshingdi (gas-fired power plant)	In Operation
3.	22 MW Feni (gas-fired power plant)	In Operation
4.	11 MW Mohipal, Feni (gas-fired power plant)	In Operation
5.	22 MW Barabkunda, Chittagong (gas-fired r plant)	In Operation
6.	35 MW Dhaka EPZ (gas-fired power plant)	In Operation
7.	44 MW Chittagong EPZ (gas-fired power plant)	In Operation
8.	50 MW HFO Power Plant (Patenga, Chittagong)	In operation
9.	55 MW HFO Power Plant (Nababganj, Southern Dhaka)	Under construction
10	D- Water Tech Limited	In operation

Sl.	Name of the Projects	Current Status
11.	WTP capacity expansion at Comilla EPZ	In operation
12.	WTP capacity expansion at Adamjee EPZ at Narayanganj	In operation
13.	Expansion / refinancing of KDS Container Depot, Shitakunda, Chittagong	In operation
14.	Fibre@home Limited	In operation

The BB needs to engage a consultancy firm with good track record of monitoring ESMP of the power plants both in operation and construction phase financed under IPFF.

2. **Objectives**

The purpose of consultancy service is to monitor compliance to WB and DOE requirements specified in the project EIAs and Environmental and Social Management Plans (ESMPs), and there by verify the effective implementation of their ESMPs.

3. Scope of Services

3.1 Monitoring and Evaluation

In general, monitoring of a project involves the collection of routine data that measure progress toward achieving project objectives. It is used to track changes in project performance over time. Its purpose is to permit stakeholders to make informed decision regarding the effectiveness of the project. In IPFF additional financing, it is expected that, for each investment approved for financing, the Environmental Monitoring consultant will complete detailed environmental monitoring reports assessing project performance with the approved ESMP as well as any other applicable stand-alone environmental, social, biological, health and safety management plans developed for the investment, to verify that management and mitigation measures as mentioned in the ESMP and other plans (as applicable) are appropriately implemented that unforeseen impacts are detected at an early stage and allow corrective measures to be implemented, if needed. The frequency of the monitoring reports will generally range from monthly (during construction stage) to quarterly (during operation stage), but may vary depending on the type of investment, the specific parameters to be monitored, and any applicable investment-specific considerations. For each monitoring report, multiple monitoring visits may be required (potentially up to weekly for some indicators). Monitoring shall commence upon investor signing of the loan document to receive funding from IPFF, and will continue throughout the tenure of the IPFF project. Monitoring reports are expected be based on review of applicable documentation as well as carrying out of field measurements and observations at the investment site. Prior to initiation of the first monitoring report for each project phase (construction and operation) of a given

investment, the consultant shall review available background documents and develop a work plan outlining the specific parameters and methodologies of field data collection to be utilized.

3.2 ESMF Compliance

The ESMF includes both safeguard instrument and compliance policy covering both the World Bank and GOB requirements. This instrument has been prepared as a separate and stand-alone document to be used for the IPFF project, and sets out mitigation, monitoring and institutional measures to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels. The consultant shall refer to the ESMF for additional guidance on specific monitoring parameters and requirements for IPFF investments.

For the power sector, the following environmental monitoring parameters would be expected to be covered, unless otherwise specified in the investment-specific EMP, related management plans as well as the World Bank Safeguard Policies and Environmental, Health and Safety (EHS) guidelines and applicable national regulations.

3.2.1 Example of Environmental Monitoring Parameters for Power Sector - Construction Phase

Key environmental issues pertaining power sector during the construction phase are given below:

Emission to air: Fugitive dust may be emitted from general site work, road improvements (the existing dirt access roads will require upgrades and resurfacing), and truck traffic (related to deliveries of materials and equipment). Concrete and asphalt batch plants may also contribute to particulate emissions. The operation of machinery and vehicles would also have air quality impacts.

Plant operation would result in emissions of sulphur dioxide, nitrogen oxides, carbon monoxide, carbon dioxide, particulate matter less than 10 microns and total suspended particulate. The particulates may contain small amounts of trace metals. Sulphur dioxide emission would be controlled through limiting the sulphur content of the fuel. Nitrogen oxide emission would be controlled through burner management and water injection to the combustion turbines. Particulate emissions would be reduced through good combustion control to minimize the products of incomplete combustion.

Noise: Noise from construction activity may be significant. Noise emitting equipment should comply with the national noise standards and should be properly maintained. Work involving nuisance noise would be minimized during locally recognized days of rest and at nights.

Ground and Surface water: Minor short-term lowering of the groundwater table may occur in the vicinity of the site during dewatering of the foundation excavations. The limited drawdown from dewatering activity is not expected to have a significant impact. Storm water discharges can be managed to minimize water quality impacts to nearby surface water sources. Water from dewatering activities could contain suspended solids, oil and grease. Measures could be taken to remove settle able solids prior to discharging water from the site.

Other Considerations: Some other relevant issues are to be monitored by the EIA consultant during construction phase:

- While few trees could be affected by the site work, no trees would be cut that do not interfere with the site work.

- The final site grade would facilitate drainage and avoid flooding and pooling. A site drainage plan would be developed to protect against erosion.
- Construction equipment would meet the applicable noise standard of WB or international best practices.
- To reduce dust from site access upgrades, disturbed areas would be watered on as needed basis.
- The water supply for use in construction of the generation facility would be monitored to ensure that it does not adversely affect other water uses in the area.
- A spill and emergency response plan would be developed and put in place prior to commencement of construction.
- The upgrade of the main access road to the plant would have a positive effect on local traffic.
- Disturbance to aquatic life would be minimized by careful siting of the intake and outfall.
- Topsoil of the final site would be graded and planted as appropriate.

3.2.2 Example of Environmental Monitoring Parameters for Power Sector - Operational Phase

Emissions to air: Plant operation would result in emissions of sulfur dioxide, nitrogen oxides, carbon monoxide, carbon dioxide, particulate matter less than 10 microns and total suspended particulate. The particulates may contain small amounts of trace metals. The generation facility would be designed to meet the WB and DOE emission standards and ambient air quality impact limits. Sulphur dioxide emission would be controlled through limiting the sulfur content of the fuel or using fuel Gas desulfurization system in the plant. Nitrogen oxide emission would be controlled through burner management and water injection to the combustion turbines. Particulate emissions would be reduced through good combustion control to minimize the products of incomplete combustion.

Noise: Significant noise levels can result from operation of the power station. The engines would be designed to limit noise within DOE and WB compliance.

Water impact: Water intake for the once-through cooling system may affect a localized zone of the marine ecosystem where the intake structure is located. The primary impacts of concern are impingement of marine life on the intake screens and entrainment of marine species in the cooling water system. Design parameters that can be used to minimize the impact of fish communities are location, inlet spacing and inlet velocity. An intake bar would be used to prevent large fish from being entrained in the system.

Thermal discharge: If the temperature in the vicinity of the discharge location increases significantly, modifications to the diffuser can be made to enhance the diffusion of the thermal plume.

Chemical discharge in cooling water: Chemical discharge in the plant cooling water is expected to be negligible for a gas fired small power plant.

Hazardous waste: The amount of hazardous waste originating from maintenance sources

would be very low for the aforesaid power plants. However, the waste would consist primarily of spent lubricants, used rags and spent clean-up solvents. There would be no ash residue and no sludge accumulation from fuel discharge.

Public complaints:

There should be an arrangement of regular public consultation. It helps to identify any possible complaints which the local populace may have regarding the construction and operation of the power plant and will provide an opportunity to inform the residents concerning the project progress. Public consultation also provides an opportunity for advising local people of any foreseen disturbances that might otherwise cause concern.

Some other relevant issues are to be monitored by the EIA consultant during operational phase:

- The engines would employ state of the art technology for all pollutants.
- Workers in close proximity to this equipment may be required to use hearing protection.
- The location of the cooling water intake would be chosen to minimize the impact on the aquatic environment. Bar screen intake screens would be utilized. Final screening with travelling water screens at cooling water pump suctions would be employed. An inlet velocity of less than 1 m/s would be used to minimize entrainment.
- A sewage treatment facility would be provided at the plant and discharge of treated effluent would be combined with the cooling water discharge. (Only for large power plants)
- Clearing for transmission lines would be minimized. The line would be routed to minimize the impact on residential areas. The electromagnetic field emitted by the line would be checked.
- Landscaping would be used to enhance the appearance of the generation facility.

3.2.3 Laboratory Tests

For determining the environmental parameters, the laboratory tests should be carried out in reliable laboratories. The preference of laboratories sequentially are as follows:

i) The laboratory of BCSIR

ii) In case of tests those are not available at BCSIR, will be run at any other accredited laboratory of the country or at DOE laboratory with prior approval from IPFF.

3.2.4 *For gaseous substance harmful to human beings (if any)*

Additional parameters will be added in the contract for any gaseous substances produced by the plant which may be harmful to human beings. The consultant will address the chance of leaking such type of gases/harmful elements through the pipelines of existing power plants as well as provide a suggestion for a remedy in their periodic report.

3.3 Monitoring schedule

A tentative monitoring schedule of common indicators for power plants, for both construction and operational phase, has been provided here. But it is expected that the consultant can propose more structured and detailed monitoring schedule, based on his/her expertise, as well as on the specifics of the investment.

	Phase	Monitoring Item	Process and Methodology	Frequency
1	Construction phase	Construction dust	Damping exposed earthen surface and control of vehicle movement	Monthly
2		Construction noise	Major works to be undertaken during normal working hours Nearby residents to be warned of any unusual noisy operation	Monthly
3		Ground and surface water	Monitor whether significant pollution is being created for any activities For ground water, Arsenic and Iron content should be taken under consideration	Monthly
4		Other parameters as specified in the EMP	Based on the significance of the parameters	Monthly
1	Operational phase	Ambient air quality	Ambient air quality monitoring (SOx, NOx CO) and PM_{10} (for all power plants) and $PM_{2.5}$(for all power plants) survey to be undertaken during plant operation ($PM_{2.5}$ 24 hours average have to be done)	Quarterly at factory gate
2		Fuel quality	Analysis of sampling, Sulfur content,	Quarterly for HFO plants
3		Stack emission	SPM, NOx, SOx, PM	Quarterly

	Phase	Monitoring Item	Process and Methodology	Frequency
		Lubricant Management	Quantity (virgin and used), safe storage, spillage and disposal	Monthly
4		Water & liquids discharge	Analysis by sampling, review of safe disposal, pH, TDS, TSS, DO, BOD_5, COD. For ground water, Arsenic and Iron content should be taken under consideration	Weekly for large power plants
5		Noise level	Plant to meet design levels Ear muffs to be provided as per requirement Warning signs where appropriate Noise monitoring	Quarterly and upon receipt of complaint around the plant perimeter (i.e., at least at 4 places) and in the control room. Averaging period: 8 hrs
6		Chemical waste	Effluent from neutralizing tank to be analyzed by sampling, review of safe disposal, there should be provision for adequate handling of hazardous waste, such as sludge etc...	Half-yearly
7		Socio-economic	By periodic social survey	Annual
8		Public complaints	Complaints will be noted by maintaining register	As soon as complaint received
9		Terrestrial ecology	Monitoring the impacts to plant and vegetation nearby. There should be appropriate provision for heat disposal. Need to compare present situation with scenario mentioned in ESIA report. No vast study is required.	Semi-annually
10		Aquatic ecology	Effluent discharge to be monitored for pH, BOD, oil & grease and temperature (as appropriate)	Weekly for large power plants

Note: for all items, averages of parameters are to be observed and taken according to

respective regulations of Bangladesh Government.

3.4 Reporting

There shall be a proper reporting system at every investment site. Through regular reporting the environmental monitoring consultant has to ensure the satisfactory obtaining and maintaining all environmental data records and for correct implementation of the public complaints and emergency procedures. Above all he has to uphold the extent to which the project is having or has had the desired impact, in what areas it is effective, and where corrections need to be considered.

4. Deliverables and Time Budget

The deliverables for each project will contain the following:

SI No.	Name of Deliverables	Deliverables	Time
1.	Work Plan describing the detailed planning of the assignment, including parameters to be monitored, methodologies and schedule for each subproject investment.	D1	15 days after work order to proceed
2.	Construction Phase: Project progress report (separate reports for each investment), with emphasis on status of construction dust, noise and water quality, and any other key issues to be identified on a project by project basis	D2	Every month
3.	Operational Phase: Quarterly reports (separate reports for each investment) on monitoring the items as has been mentioned in the monitoring schedule	D3	Quarterly
4.	Final Report (for each investment)	D4	Within 15 days after completion of assignment

The Consultant will be required to provide reports for more than one investment at the same time and will prepare individual reports for each. **Since the final acceptance of the reports depend on addressing the review comments of the World Bank, the reports may need to be revised several times depending on incorporating World Bank's observation.**

Annex 1: OP 4.01

OP 4.01 - Environmental Assessment	
These policies were prepared for use by World Bank staff and are not necessarily a complete treatment of the subject.	**OP 4.01 January, 1999**
This Operational Policy statement was updated in March 2007 to reflect issuance of OP/BP 8.00, *Rapid Response to Crises and Emergencies*, dated March 2007. Previously revised in August 2004 to ensure consistency with the requirements of OP/BP 8.60, issued in August 2004. These changes may be viewed here.	
Note: OP and BP 4.01 together replace OMS 2.36, *Environmental Aspects of Bank Work*; OD 4.00, Annex A, *Environmental Assessment*; OD 4.00, Annex B, *Environmental Policy for Dam and Reservoir Projects*; OD 4.01, *Environmental Assessment*; and the following Operational Memoranda: *Environmental Assessments: Instructions to Staff on the Handling of the Borrower's Consultations with Affected Groups and Relevant Local NGOs*, 4/10/90; *Environmental Assessments: Instructions to Staff on the Release of Environmental Assessments to Executive Directors*, 11/21/90; and *Release of Environmental Assessments to Executive Directors*, 2/20/91. Additional information related to these statements is provided in the *Environmental Assessment Sourcebook* (Washington, D.C.: World Bank, 1991) and subsequent updates available from the Environment Sector Board, and in the *Pollution Prevention and Abatement Handbook*. Other Bank statements that relate to the environment include OP/BP 4.02, *Environmental Action Plans*; OP/BP 4.04, *Natural Habitats*; OP 4.07, *Water Resources Management*; OP 4.09, *Pest Management*; OP/BP 4.10, *Indigenous Peoples*; OP 4.11, *Physical Cultural Resources*; OP/BP 4.12, *Involuntary Resettlement* ; OP/BP 4.36, *Forests*; and OP/BP 10.04, *Economic Evaluation of Investment Operations.* These OP and BP apply to all projects for which a PID is first issued after March 1, 1999. Questions may be addressed to the Chair, Environment Sector Board.	
1. The Bank[1] requires environmental assessment (EA) of projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus to improve decision making. 2. EA is a process whose breadth, depth, and type of analysis depend on the nature, scale, and potential environmental impact of the proposed project. EA evaluates a project's potential environmental risks and impacts in its area of influence;[2] examines project alternatives; identifies ways of improving project selection, sitting, planning, design, and implementation by preventing, minimizing, mitigating, or compensating for adverse environmental impacts and enhancing positive impacts; and includes the process of mitigating and managing adverse environmental impacts throughout project implementation. The Bank favors preventive measures over mitigatory or compensatory measures, whenever feasible.	

3. EA takes into account the natural environment (air, water, and land); human health and safety; social aspects (involuntary resettlement, indigenous peoples, and physical cultural resources);[3] and trans-boundary and global environmental aspects.[4] EA considers natural and social aspects in an integrated way. It also takes into account the variations in project and country conditions; the findings of country environmental studies; national environmental action plans; the country's overall policy framework, national legislation, and institutional capabilities related to the environment and social aspects; and obligations of the country, pertaining to project activities, under relevant international environmental treaties and agreements. The Bank does not finance project activities that would contravene such country obligations, as identified during the EA. EA is initiated as early as possible in project processing and is integrated closely with the economic, financial, institutional, social, and technical analyses of a proposed project.

4. The borrower is responsible for carrying out the EA. For Category A projects,[5] the borrower retains independent EA experts not affiliated with the project to carry out the EA.[6] For Category A projects that are highly risky or contentious or that involve serious and multidimensional environmental concerns, the borrower should normally also engage an advisory panel of independent, internationally recognized environmental specialists to advise on all aspects of the project relevant to the EA.[7] The role of the advisory panel depends on the degree to which project preparation has progressed, and on the extent and quality of any EA work completed, at the time the Bank begins to consider the project.

5. The Bank advises the borrower on the Bank's EA requirements. The Bank reviews the findings and recommendations of the EA to determine whether they provide an adequate basis for processing the project for Bank financing. When the borrower has completed or partially completed EA work prior to the Bank's involvement in a project, the Bank reviews the EA to ensure its consistency with this policy. The Bank may, if appropriate, require additional EA work, including public consultation and disclosure.

6. The *Pollution Prevention and Abatement Handbook* describes pollution prevention and abatement measures and emission levels that are normally acceptable to the Bank. However, taking into account borrower country legislation and local conditions, the EA may recommend alternative emission levels and approaches to pollution prevention and abatement for the project. The EA report must provide full and detailed justification for the levels and approaches chosen for the particular project or site.

EA Instruments

7. Depending on the project, a range of instruments can be used to satisfy the Bank's EA requirement: environmental impact assessment (EIA), regional or sectoral EA, environmental audit, hazard or risk assessment, and environmental management plan (EMP).[8] EA applies one or more of these instruments, or elements of them, as appropriate. When the project is likely to have sectoral or regional impacts, sectoral or regional EA is required.[9]

Environmental Screening

8. The Bank undertakes environmental screening of each proposed project to determine the appropriate extent and type of EA. The Bank classifies the proposed project into one of four categories, depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts.

   (a) *Category A*: A proposed project is classified as Category A if it is likely to have significant adverse environmental impacts that are sensitive,[10] diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works. EA for a Category A project examines the project's potential negative and positive environmental impacts, compares them with those of feasible alternatives (including the "without project" situation), and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. For a Category A project, the borrower is responsible for preparing a report, normally an EIA (or a suitably comprehensive regional or sectoral EA) that includes, as necessary, elements of the other instruments referred to in para. 7.

   (b) *Category B*: A proposed project is classified as Category B if its potential adverse environmental impacts on human populations or environmentally important areas--including wetlands, forests, grasslands, and other natural habitats--are less adverse than those of Category A projects. These impacts are site-specific; few if any of them are irreversible; and in most cases mitigatory measures can be designed more readily than for Category A projects. The scope of EA for a Category B project may vary from project to project, but it is narrower than that of Category A EA. Like Category A EA, it examines the project's potential negative and positive environmental impacts and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. The findings and results of Category B EA are described in the project documentation (Project Appraisal Document and Project Information Document).[11]

   (c) *Category C*: A proposed project is classified as Category C if it is likely to have minimal or no adverse environmental impacts.

   Beyond screening, no further EA action is required for a Category C project.

   (d) *Category FI*: A proposed project is classified as Category FI if it involves investment of Bank funds through a financial intermediary, in subprojects that may result in adverse environmental impacts.

EA for Special Project Types

Sector Investment Lending

9. For sector investment loans (SILs),[12] during the preparation of each proposed subproject, the project coordinating entity or implementing institution carries out appropriate EA according to country requirements and the requirements of this policy.[13] The Bank appraises and, if necessary, includes in the SIL components to strengthen, the capabilities of the coordinating entity or the implementing institution to (a) screen subprojects, (b) obtain the necessary expertise to carry out EA, (c) review all findings and results of EA for individual subprojects, (d) ensure implementation of

mitigation measures (including, where applicable, an EMP), and (e) monitor environmental conditions during project implementation.[14] If the Bank is not satisfied that adequate capacity exists for carrying out EA, all Category A subprojects and, as appropriate, Category B subprojects--including any EA reports--are subject to prior review and approval by the Bank.

Financial Intermediary Lending

10. For a financial intermediary (FI) operation, the Bank requires that each FI screen proposed subprojects and ensure that sub-borrowers carry out appropriate EA for each subproject. Before approving a subproject, the FI verifies (through its own staff, outside experts, or existing environmental institutions) that the subproject meets the environmental requirements of appropriate national and local authorities and is consistent with this OP and other applicable environmental policies of the Bank.[15]

11. In appraising a proposed FI operation, the Bank reviews the adequacy of country environmental requirements relevant to the project and the proposed EA arrangements for subprojects, including the mechanisms and responsibilities for environmental screening and review of EA results. When necessary, the Bank ensures that the project includes components to strengthen such EA arrangements. For FI operations expected to have Category A subprojects, prior to the Bank's appraisal each identified participating FI provides to the Bank a written assessment of the institutional mechanisms (including, as necessary, identification of measures to strengthen capacity) for its subproject EA work.[16] If the Bank is not satisfied that adequate capacity exists for carrying out EA, all Category A subprojects and, as appropriate, Category B subprojects--including EA reports--are subject to prior review and approval by the Bank.[17]

Emergency Operations under OP 8.00

12. The policy set out in OP 4.01 normally applies to emergency operations processed under OP/BP 8.00, *Rapid Response to Crises and Emergencies*. However, when compliance with any requirement of this policy would prevent the effective and timely achievement of the objectives of an emergency operation, the Bank may exempt the project from such a requirement. The justification for any such exemption is recorded in the loan documents. In all cases, however, the Bank requires at a minimum that (a) the extent to which the emergency was precipitated or exacerbated by inappropriate environmental practices be determined as part of the preparation of such projects, and (b) any necessary corrective measures be built into either the emergency operation or a future lending operation.

Institutional Capacity

13. When the borrower has inadequate legal or technical capacity to carry out key EA-related functions (such as review of EA, environmental monitoring, inspections, or management of mitigatory measures) for a proposed project, the project includes components to strengthen that capacity.

Public Consultation

14. For all Category A and B projects proposed for IBRD or IDA financing, during the EA process, the borrower consults project-affected groups and local nongovernmental

organizations (NGOs) about the project's environmental aspects and takes their views into account.[18] The borrower initiates such consultations as early as possible. For Category A projects, the borrower consults these groups at least twice: (a) shortly after environmental screening and before the terms of reference for the EA are finalized; and (b) once a draft EA report is prepared. In addition, the borrower consults with such groups throughout project implementation as necessary to address EA-related issues that affect them.[19]

Disclosure

15. For meaningful consultations between the borrower and project-affected groups and local NGOs on all Category A and B projects proposed for IBRD or IDA financing, the borrower provides relevant material in a timely manner prior to consultation and in a form and language that are understandable and accessible to the groups being consulted.

16. For a Category A project, the borrower provides for the initial consultation a summary of the proposed project's objectives, description, and potential impacts; for consultation after the draft EA report is prepared, the borrower provides a summary of the EA's conclusions. In addition, for a Category A project, the borrower makes the draft EA report available at a public place accessible to project-affected groups and local NGOs. For SILs and FI operations, the borrower/FI ensures that EA reports for Category A subprojects are made available in a public place accessible to affected groups and local NGOs.

17. Any separate Category B report for a project proposed for IDA financing is made available to project-affected groups and local NGOs. Public availability in the borrowing country and official receipt by the Bank of Category A reports for projects proposed for IBRD or IDA financing, and of any Category B EA report for projects proposed for IDA funding, are prerequisites to Bank appraisal of these projects.

18. Once the borrower officially transmits the Category A EA report to the Bank, the Bank distributes the summary (in English) to the executive directors (EDs) and makes the report available through its Info Shop. Once the borrower officially transmits any separate Category B EA report to the Bank, the Bank makes it available through its InfoShop.[20] If the borrower objects to the Bank's releasing an EA report through the World Bank Info Shop, Bank staff (a) do not continue processing an IDA project, or (b) for an IBRD project, submit the issue of further processing to the EDs.

Implementation

19. During project implementation, the borrower reports on (a) compliance with measures agreed with the Bank on the basis of the findings and results of the EA, including implementation of any EMP, as set out in the project documents; (b) the status of mitigatory measures; and (c) the findings of monitoring programs. The Bank bases supervision of the project's environmental aspects on the findings and recommendations of the EA, including measures set out in the legal agreements, any EMP, and other project documents.[21]

1. "Bank" includes IBRD and IDA; "EA" refers to the entire process set out in OP/**BP** 4.01; "loans" includes IDA credits and IDA grants; "borrower" includes, for guarantee

operations, a private or public project sponsor receiving from another financial institution a loan guaranteed by the Bank; and "project" covers all operations financed by Bank loans or guarantees except development policy lending (for which the environmental provisions are set out in OP/BP 8.60, *Development Policy Lending*), and also includes projects under adaptable lending-adaptable program loans (APLs) and learning and innovation loans (LILs)-and projects and components funded under the Global Environment Facility. The project is described in Schedule 2 to the Loan/Credit Agreement. This policy applies to all components of the project, regardless of the source of financing

2. For definitions, see Annex A. The area of influence for any project is determined with the advice of environmental specialists and set out in the EA terms of reference.

3. See OP/BP 4.12, Involuntary *Resettlement*; OP/BP 4.10, *Indigenous Peoples*; and OP/BP 4.11, *Physical Cultural Resources.*

4. Global environmental issues include climate change, ozone-depleting substances, pollution of international waters, and adverse impacts on biodiversity.

5. For screening, see para. 8.

6. EA is closely integrated with the project's economic, financial, institutional, social, and technical analyses to ensure that (a) environmental considerations are given adequate weight in project selection, sitting, and design decisions; and (b) EA does not delay project processing. However, the borrower ensures that when individuals or entities are engaged to carry out EA activities, any conflict of interest is avoided. For example, when an independent EA is required, it is not carried out by the consultants hired to prepare the engineering design.

7. The panel (which is different from the dam safety panel required under OP/BP 4.37, Safety of Dams) advises the borrower specifically on the following aspects: (a) the terms of reference for the EA, (b) key issues and methods for preparing the EA, (c) recommendations and findings of the EA, (d) implementation of the EA's recommendations, and (e) development of environmental management capacity.

8. These terms are defined in Annex A. Annexes B and C discuss the content of EA reports and EMPs.

9. Guidance on the use of sectoral and regional EA is available in EA Sourcebook Updates 4 and 15.

10. A potential impact is considered "sensitive" if it may be irreversible (e.g., lead to loss of a major natural habitat) or raise issues covered by OP 4.04, *Natural Habitats*; OP/BP 4.10, *Indigenous Peoples*; OP/BP 4.11, *Physical Cultural Resources* or OP 4.12, *Involuntary Resettlement*.

11. When the screening process determines, or national legislation requires, that any of the environmental issues identified warrant special attention, the findings and results of Category B EA may be set out in a separate report. Depending on the type of project and the nature and magnitude of the impacts, this report may include, for example, a limited environmental impact assessment, an environmental mitigation or management plan, an environmental audit, or a hazard assessment. For Category B projects that are not in environmentally sensitive areas and that present well-defined and well-understood

issues of narrow scope, the Bank may accept alternative approaches for meeting EA requirements: for example, environmentally sound design criteria, sitting criteria, or pollution standards for small-scale industrial plants or rural works; environmentally sound sitting criteria, construction standards, or inspection procedures for housing projects; or environmentally sound operating procedures for road rehabilitation projects.

12. SILs normally involve the preparation and implementation of annual investment plans or subprojects as time slice activities over the course of the project.

13. In addition, if there are sector wide issues that cannot be addressed through individual subproject EAs (and particularly if the SIL is likely to include Category A subprojects), the borrower may be required to carry out sectoral EA before the Bank appraises the SIL.

14. Where, pursuant to regulatory requirements or contractual arrangements acceptable to the Bank, any of these review functions are carried out by an entity other than the coordinating entity or implementing institution, the Bank appraises such alternative arrangements; however, the borrower/coordinating entity/implementing institution remains ultimately responsible for ensuring that subprojects meet Bank requirements.

15. The requirements for FI operations are derived from the EA process and are consistent with the provisions of para. 6 of this OP. The EA process takes into account the type of finance being considered, the nature and scale of anticipated subprojects, and the environmental requirements of the jurisdiction in which subprojects will be located.

16. Any FI included in the project after appraisal complies with the same requirement as a condition of its participation.

17. The criteria for prior review of Category B subprojects, which are based on such factors as type or size of the subproject and the EA capacity of the financial intermediary, are set out in the legal agreements for the project.

18. For the Bank's approach to NGOs, see GP 14.70, *Involving Nongovernmental Organizations in Bank-Supported Activities*.

19. For projects with major social components, consultations are also required by other Bank policies--for example, OP/BP 4.10, *Indigenous Peoples*, and OP/BP 4.12, *Involuntary Resettlement.*

20. For a further discussion of the Bank's disclosure procedures, see *The World Bank Policy on Disclosure of Information*. Specific requirements for disclosure of resettlement plans and indigenous peoples development plans are set out in OP/BP 4.10, *Indigenous Peoples*, and OP/BP 4.12, *Involuntary Resettlement.*

See OP/BP 13.05, *Project Supervision*.

References

1. Bangladesh Environmental Conservation Act 1995
2. Bangladesh Environmental Conservation Rules 1997
3. The World Bank Operational Policy OP 4.01: Environmental assessment
4. The World Bank Operational Policy OP 4.12: Involuntary Resettlement
5. The World Bank Operational Policy OP 4.09: Pest Management
6. The World Bank Operational Policy OP 4.04: Natural Habitats
7. IFC Environmental, Health, and Safety General Guidelines
8. The World Bank Policy on Access to Information (2013).
9. Environmental, Health, and Safety General Guidelines (2007)
10. EHSGs on Thermal Power Plants (2008) and other Sector Specific Guidelines.
11. Financial Intermediary Lending and Environmental Assessment, IFC
12. Guidelines on Environmental Management Plans, IPFF, 2007
13. Guide to the Environmental Conservation Act 1995 and Rules 1997, Bangladesh Centre for Advanced Studies
14. Handbook on Resettlement-A guide to Good Practice, IFC
15. Environmental and Social Framework, IDCOL, 1997
16. Environmental and Social Appraisal Manual, IDCOL
17. Handbook for preparing Resettlement Action Plan, IFC
18. The Acquisition and Requisition of Immovable Property Ordinance,1982
19. Environmental Management Framework for Bangladesh Local Governance Support Project, Local Government Division, 2006,
20. The Bangladesh Environment Conservation Act, 1995
21. The Environment Pollution Control Ordinance, 1977
22. A User‟s Guide to Poverty and Social Impact Analysis, The World Bank
23. Involuntary Resettlement Sourcebook, The World Bank, 2009
24. Social Analysis Sourcebook, The World Bank
25. The World Bank Policy on Disclosure of Information, The World Bank, 2002
26. Guidelines and Principles for Social Impact Assessment, U.S. Department of Commerce National Oceanic and Atmospheric Administration National Marine Fisheries Service, 1994

Annex 2

Initial Information on Land Requisition and Permanent Acquisition proposed for Onshore Spur Gas Pipeline

Annex 2: Initial Information on Land Requisition and Permanent Acquisition proposed for Onshore Spur Gas Pipeline

00- 3500 mts (Dakshin Dhurung)							
S N.	Chainage		Daag No.	Khatian No.	Requirement of Land in Sqm		
	From	To			Temporary Requisition in Sqm (7.5m corrd. Left side area)	Permanent Acquisition in Sqm (8.0m center corrd.)	Temporary Requisition in Sqm (7.5m corrd. Right side area)
1	-920	1210					
2	1210	1286.6	5		645.000	613.200	503.100
3	1286.6	1306.5	6		150.000	160.000	150.000
4	1306.5	1320.1	1241		97.900	109.300	111.900
5	1320.1	1337.1	1242		131.000	136.000	119.000
6	1337.1	1354.7	1282		93.500	140.700	151.700
7	1354.7	1365.4	1280		2.400	85.700	194.000
8	1365.4	1375.3	1281		103.300	76.200	2.000
9	1365.4	1375.3	1257		54.600	0.000	0.000
10	1365.4	1375.3	1256		8.800	0.000	0.000
11	1375.3	1395.1	1258		48.200	150.700	122.200
12	1395.1	1396.2	1259		0.000	22.000	119.400
13	1396.2	1406.8	1254		166.400	82.200	5.000
14	1406.8	1462.8	1252		372.700	444.000	377.000
15	1462.8	1465.8	1251		0.000	55.600	131.500
16	1465.8	1483.5	1246		198.000	135.300	7.400
17	1483.5	1492.4	1249		0.000	70.700	189.000
18	1483.5	1492.4	1247		64.400	0.000	0.000
19	1492.4	1517.7	1248		210.970	204.750	82.300
20	1517.7	1535.36	1405		8.900	141.300	154.100
21	1517.7	1535.36	1403		0.000	0.000	15.600
22	1517.7	1535.36	1404		0.000	0.000	86.600
23	1535.36	1563.46	1406		239.800	216.600	210.400
24	1563.46	1585.16	1410		146.500	183.800	180.100
25	1585.16	1599.76	1240		106.400	115.500	84.400
26	1599.76	1627.98	1296		194.600	236.600	207.700
27	1627.98	1694.75	1218		555.200	532.300	365.500
28	1627.98	1694.75	1217		0.000	27.000	177.000
29	1694.75	1842.75	1196		1125.000	1184.000	1200.000
30	1842.75	1847.95	1200		38.900	42.300	40.000
31	1847.95	1866.9	1199		135.000	151.500	149.100
32	1866.9	1877.0	1198		130.500	183.100	61.500
33	1877.0	1908.7	1208		250.000	265.000	97.000
34	1877.0	1908.7	1207		0.000	0.000	50.000
35	1908.7	1917.2	1209		0.000	60.000	150.200
36	1917.2	1965.9	1180		418.700	405.900	182.300
37	1917.2	1965.9	1181		161.800	5.000	0.000
38	1965.9	2003.7	1179	477	45.750	285.000	413.200
39	1997	2011	1178	477	0.000	0.000	66.482
40	1992	2073	1166	901	288.421	92.093	0.629

00- 3500 mts (Dakshin Dhurung)							
S N.	Chainage		Daag No.	Khatian No.	Requirement of Land in Sqm		
	From	To			Temporary Requisition in Sqm (7.5m corrd. Left side area)	Permanent Acquisition in Sqm (8.0m center corrd.)	Temporary Requisition in Sqm (7.5m corrd. Right side area)
41	2004	2052	1167	901	277.778	377.091	297.989
42	2063	2077	1154	1686	4.287	114.714	249.270
43	2077	2094	1160	327	130.791	133.982	65.000
44	2084	2101	1159	1887	0.000	0.000	58.466
45	2094	2113	1161	1526\1887	163.069	128.117	2.627
46	2101	2120	1158	1526\1686	0.000	43.051	149.271
47	2111	2124	1162	968	91.530	16.040	0.000
48	2115	2131	1141	1	28.344	110.998	114.230
49	2128	2153	1142	2060	134.620	28.698	0.000
50	2134	2183	1144	114	256.289	387.357	397.532
51	2183	2200	1129	1526	118.897	129.261	115.439
52	2196	2231	1131	1499	210.799	31.248	0.000
53	2200	2230	1230	1472	27.432	213.189	214.503
54	2230	2239	1124	347	54.475	73.102	16.742
55	2230	2255	1125	1499	0.000	0.000	129.882
56	2221	2230	1126	319	0.000	0.000	7.799
57	2239	2252	1123	409	100.299	102.723	21.236
58	2252	2271	1121	409	142.009	138.078	0.000
59	2255	2272	1122	1526	0.000	10.370	123.377
60	2271	2288	1110	409	258.483	143.505	0.000
61	2288	2305	1109	319	0.000	129.568	260.328
62	2302	2326	1107	1499	174.555	54.597	0.000
63	2305	2320	1108	1526	0.000	75.347	110.279
64	2326	2346	1104	184	107.002	0.000	0.000
65	2320	2373	1094	1848	178.593	418.565	405.749
66	2346	2370	1095	759	49.958	0.000	0.000
67	2366	2383	1073	1500	0.000	0.000	40.466
68	2373	2380	1093	901	50.373	57.079	36.917
69	2380	2424	1092	705	330.595	349.527	84.475
70	2383	2447	1090	1500	0.000	0.000	388.103
71	2424	2446	1091	705	164.529	177.547	10.920
72	2446	2451	564	1	32.809	33.397	29.811
73	2451	2480	273	1496	208.948	231.253	223.209
74	2480	2500	275	748	117.553	161.625	29.048
75	2481	2496	274	759	0.000	0.000	95.153
76	2478	2517	270	2306	163.614	9.691	0.000
77	2507	2527	279	1599	0.000	122.166	150.541
78	2500	2507	276	759	2.697	56.427	78.337
79	2527	2535	269	759	144.680	71.749	0.000
80	2535	2549	268	181	95.685	68.339	0.000
81	2527	2548	260	767	0.000	64.196	157.190
82	2549	2560	267	1279	84.321	77.649	0.000
83	2548	2559	261	181	0.000	10.064	81.104

00- 3500 mts (Dakshin Dhurung)							
S N.	Chainage		Daag No.	Khatian No.	Requirement of Land in Sqm		
	From	To			Temporary Requisition in Sqm (7.5m corrd. Left side area)	Permanent Acquisition in Sqm (8.0m center corrd.)	Temporary Requisition in Sqm (7.5m corrd. Right side area)
84	2560	2570	266	2074	78.150	81.158	0.000
85	2559	2570	262	235	0.000	4.253	82.392
86	2570	2585	265	676	108.186	101.539	0.000
87	2570	2592	263	2306	0.000	31.077	164.958
88	2585	2596	264	1598	84.135	59.936	0.000
89	2596	2615	219	556	156.444	91.765	0.000
90	2615	2675	220	907	422.623	551.539	603.723
91	2660	2671	221	760	0.000	0.000	13.115
92	2675	2705	215	1808	221.818	238.518	51.168
93	2705	2763	214	907	433.566	316.295	0.000
94	2672	2751	213	760	0.000	129.070	541.720
95	2751	2772	201	907	0.000	39.995	157.078
96	2763	2776	200	1833	194.975	92.845	0.000
97	2789	2805	198	348	34.175	0.000	0.000
98	2776	2830	199	1	225.594	427.219	448.085
99	2830	2893	191	2103	587.529	501.103	375.329
100	2902	2909	189	1832	10.952	0.000	0.000
101	2893	2926	190	1	152.517	152.208	136.138
102	3187	3240	174	1	135.887	315.594	304.157
103	3187	3195	169	260	13.762	0.000	0.000
104	3195	3210	168	1124\1647	65.339	0.000	0.000
105	3210	3237	167	260	182.305	18.742	0.000
106	3237	3252	165	1647	26.518	0.000	0.000
107	3240	3252	166	1124	89.479	88.924	0.437
108	3252	3270	136	260	146.868	141.342	61.358
109	3270	3282	135	260	103.745	99.265	75.584
110	3282	3335	134	2262	202.265	412.527	449.996
111	3302	3341	133	2262	198.080	19.319	0.000
112	3335	3358	106	1245	158.505	172.666	64.353
113	3337	3345	105	516	0.000	0.000	40.665
114	3345	3355	104	1647	0.000	0.000	21.275
115	3358	3388	109	1283	219.600	236.671	222.842
116	3399	3425	114	1290	60.038	0.000	0.000
117	3388	3421	110	1283	202.704	271.995	250.247
118	3425	3463	112	1290	274.320	61.105	0.000
119	3421	3458	111	1360	25.422	294.322	434.348
120	3463	3497	92	1360	264.756	246.939	25.712
121	3478	3495	93	1365	0.000	0.000	103.665
122	3495	3514	91	1284	0.000	0.000	53.615
123	3497	3522	48	1144	194.272	198.776	118.661
124	3527	3529	66	1144	49.752	16.331	0.000
125	3522	3526	67	1	0.000	25.135	46.897
126	3526	3607	61	1290	164.708	631.852	643.790

00- 3500 mts (Dakshin Dhurung)							
S N.	**Chainage**		**Daag No.**	**Khatian No.**	**Requirement of Land in Sqm**		
	From	**To**			**Temporary Requisition in Sqm (7.5m corrd. Left side area)**	**Permanent Acquisition in Sqm (8.0m center corrd.)**	**Temporary Requisition in Sqm (7.5m corrd. Right side area)**
127	3544	3559	63	1	29.441	0.000	0.000
128	3559	3587	62	1	268.818	5.817	0.000
129	3587	3604	55	324	83.883	0.000	0.000
130	3604	3622	57	324	75.738	0.000	0.000
131	3607	3633	58	1284	137.081	208.689	143.967
132	3611	3618	60	324	0.000	0.000	24.705
133	3633	3648	59	1199	117.639	125.093	116.916
134	3618	3665	80	1199	91.061	94.371	86.374
				Total Area in Sqm=	16390.30	17467.65	16165.57
				Total Area in Acre=	4.051	4.317	3.995

3500- 6500 mts (Uttar Dhurung)							
Sr. No.	Chainage		Daag No.	Khatian No.	Requirement of Land in Sqm		
	From	To			Temporary Requisition in Sqm (7.5m corrd. Left side area)	Permanent Acquisition in Sqm (8.0m center corrd.)	Temporary Requisition in Sqm (7.5m corrd. Right side area)
1	2940	2967	15517	2608/2450	260.91	214.11	82.26
2	2923	2936	15514	1723	0.00	0.00	49.07
3	2939	2949	15507	1723	0.00	0.00	23.81
4	2967	3006	15506	1723	149.66	309.57	461.63
5	3006	3036	15505	1723	219.73	242.19	213.64
6	3035	3054	15503	1723	50.52	0.00	0.00
7	3036	3055	15504	1723	88.98	149.19	140.26
8	3055	3122	14044	1155	498.59	367.96	0.00
9	3055	3122	14048	1723	0.00	165.76	501.98
10	3122	3157	14047	1723	292.65	168.55	0.00
11	3122	3179	14043	1155	0.00	235.79	438.56
12	3677	3686	13503	461	157.49	76.23	0.00
13	3665	3677	13616	1184	0.00	86.98	145.73
14	3686	3728	13604	1182	309.82	322.12	87.46
15	3683	3724	14904	2864	0.00	13.87	231.78
16	3728	3749	13613	2351	166.76	171.79	151.56
17	3724	3732	14902	2351	0.00	0.00	10.80
18	3749	3771	13614	700	163.86	176.66	166.97
19	3771	3803	13636	697	235.07	250.06	224.52
20	3799	3804	13637	697	0.42	0.00	0.00
21	3770	3785	13635	697	0.00	0.00	9.26
22	3803	3825	13651	619	167.10	181.90	173.96
23	3825	3843	13654	697	126.10	136.97	130.71

3500- 6500 mts (Uttar Dhurung)							
Sr. No.	Chainage		Daag No.	Khatian No.	Requirement of Land in Sqm		
	From	To			Temporary Requisition in Sqm (7.5m corrd. Left side area)	Permanent Acquisition in Sqm (8.0m center corrd.)	Temporary Requisition in Sqm (7.5m corrd. Right side area)
24	3843	3870	13670	697	201.10	218.61	208.80
25	3870	3890	13671	619	150.52	160.38	150.20
26	3890	3913	13682	2864	162.12	103.41	0.00
27	3890	3912	13683	619	0.00	77.31	166.08
28	3908	3955	13701	1182	109.06	0.00	0.00
29	3913	3931	13684	2864	93.17	146.26	137.26
30	3931	3955	13700	1182	122.52	195.65	177.64
31	3933	3956	13699	1182	0.00	0.00	12.14
32	3955	3971	13762	1544	117.62	125.85	118.27
33	3970	3985	13759	42	64.21	0.00	0.00
34	3971	3986	13753	82	46.80	119.17	112.43
35	3986	4002	13754	461	120.41	131.68	123.13
36	4002	4022	13752	1635	148.09	154.96	145.92
37	4022	4039	13750	2212	136.66	139.34	16.29
38	4023	4039	13751	2212	0.00	0.00	108.82
39	4039	4057	13748	611	103.52	0.00	0.00
40	4039	4057	13747	611	31.12	143.38	130.64
41	4057	4072	13729	2393	124.17	122.44	33.03
42	4056	4078	13745	1410	0.00	0.00	110.46
43	4072	4096	13730	1410	171.18	190.69	102.98
44	4078	4095	13742	2212	0.00	0.00	45.76
45	4097	4127	13733	461	33.81	0.00	0.00
46	4096	4132	13734	461	205.99	266.80	2.50
47	4095	4133	13739	686	0.00	16.41	282.20
48	4127	4148	13735	461	109.94	0.00	0.00
49	4132	4147	13736	461	32.52	123.70	36.52
50	4133	4146	13737	686	0.00	0.00	61.17
51	4147	4168	13509	686	167.09	169.34	29.56
52	4146	4164	13508	686	0.00	1.22	112.25
53	4170	4187	13510	2864/1216	117.09	51.36	0.00
54	4168	4176	13507	1216	0.00	56.11	105.78
55	4182	4224	13512	460	317.11	334.75	303.77
56	4224	4238	12258	1	110.92	117.72	106.56
57	4238	4257	12047	1365	185.17	171.47	140.48
58	4264	4299	12049	455	257.51	262.03	35.81
59	4257	4264	12048	2267	0.00	47.41	97.73
60	4266	4282	14813	457	0.00	8.17	109.59
61	4282	4309	14812	457	0.00	0.00	142.60
62	4299	4330	12050	457	218.77	239.44	33.78
63	4309	4334	12057	457	0.00	8.97	174.24
64	4329	4365	12051	455	264.28	95.57	0.00
65	4342	4370	12052	457	16.52	222.81	298.15

3500- 6500 mts (Uttar Dhurung)							
Sr. No.	Chainage		Daag No.	Khatian No.	Requirement of Land in Sqm		
	From	To			Temporary Requisition in Sqm (7.5m corrd. Left side area)	Permanent Acquisition in Sqm (8.0m center corrd.)	Temporary Requisition in Sqm (7.5m corrd. Right side area)
66	4342	4430	12017	3229	416.40	477.38	432.47
67	4414	4462	12016	339/3229/3330	218.32	0.00	0.00
68	4430	4454	12072	3329	83.62	190.21	177.59
69	4454	4466	12073	3329	19.99	99.23	96.43
70	4462	4486	12074	3229	84.34	0.00	0.00
71	4466	4523	12076	3229	340.33	452.63	418.10
72	4500	4506	12077	3229	0.00	0.00	4.49
73	4523	4544	12075	339	159.98	168.91	155.99
74	4544	4574	84	467	207.31	243.14	223.99
75	4564	4588	83	467	83.78	0.00	0.00
76	4574	4645	85	1	476.07	568.51	426.27
77	4620	4622	243	2082	0.00	0.00	0.96
78	4622	4664	242	1505	0.00	0.00	147.79
79	4664	4695	241	1505	0.00	0.00	143.79
80	4639	4661	89	2976	48.64	0.00	0.00
81	4645	4670	90	468	127.22	199.85	92.49
82	4670	4686	91	2978	111.27	126.31	30.79
83	4686	4691	92	2978	62.49	43.14	1.11
84	4684	4698	93	2978	147.12	66.73	0.35
85	4700	4705	211	1447	37.48	33.90	0.00
86	4695	4718	212	3093	0.00	14.78	159.19
87	4705	4716	208	2980	89.64	65.32	0.00
88	4726	4738	209	2874	142.20	69.54	0.00
89	4716	4743	210	3093	0.00	114.90	198.42
90	4738	4748	207	2874	31.78	0.00	0.00
91	4748	4760	206	2874	96.08	4.95	0.00
92	4734	4782	215	75	94.82	351.35	322.18
93	4760	4781	205	1419	69.40	0.00	0.00
94	4781	4863	177	2677	331.67	151.50	127.46
95	4782	4837	216	75	286.97	442.32	373.75
96	4837	4845	217	3093	1.07	59.52	109.18
97	4863	4876	175	2678	85.31	68.19	29.49
98	4872	4876	171	1419	27.36	32.64	32.72
99	4876	4901	305	2677	188.20	204.31	196.25
100	4901	4908	644	1	62.81	50.21	44.39
101	4904	4922	589	1067	0.00	0.00	53.59
102	4908	4932	588	1067	45.30	187.40	158.14
103	4911	4941	587	1067	173.91	34.07	0.00
104	4933	4936	593	2340	0.00	0.00	4.35
105	4935	4966	594	2714	88.72	243.66	254.46
106	4942	4949	584	2677	6.04	0.00	0.00
107	4949	4966	582	310	86.08	0.44	0.00

3500- 6500 mts (Uttar Dhurung)							
Sr. No.	Chainage		Daag No.	Khatian No.	Requirement of Land in Sqm		
	From	To			Temporary Requisition in Sqm (7.5m corrd. Left side area)	Permanent Acquisition in Sqm (8.0m center corrd.)	Temporary Requisition in Sqm (7.5m corrd. Right side area)
108	4967	4980	596	2805	0.00	2.29	65.65
109	4966	4997	581	2602	164.76	243.56	154.84
110	4997	5026	583	310	338.91	230.64	87.73
111	4995	5016	580	310	0.00	2.78	93.17
112	5019	5039	579	672	0.00	0.00	66.24
113	5026	5057	577	911	211.86	245.15	166.06
114	5057	5077	576	312	25.51	163.47	238.03
115	5082	5102	575	311	0.00	0.00	74.09
116	5077	5120	574	313	347.57	343.08	154.64
117	5096	5103	573	298	7.42	0.00	0.00
118	5104	5127	570	298	103.94	3.94	0.00
119	5112	5139	549	664	0.00	59.93	187.29
120	5127	5150	553	672	211.28	176.87	25.99
121	5139	5152	550	664	0.00	0.00	35.98
122	5155	5182	555	667	181.49	84.74	2.39
123	5150	5156	552	668	26.57	38.86	0.00
124	5156	5167	551	668	1.69	101.33	196.36
125	5178	5182	172	1419	38.96	43.87	47.47
126	5187	5193	537	2847	70.15	0.00	0.00
127	5182	5204	538	201	24.41	167.20	163.50
128	5193	5200	536	3239	4.60	0.00	0.00
129	5208	5220	530	1090	199.17	98.89	1.44
130	5199	5213	529	1090	0.00	34.76	104.48
131	5215	5241	523	1090	0.00	46.02	180.32
132	5226	5244	522	1090	155.49	138.07	9.23
133	5257	5273	517	2844	48.65	0.00	0.00
134	5244	5283	520	2847	142.89	313.27	389.94
135	5293	5307	881	1	0.00	0.00	38.30
136	5283	5298	518	2812	219.30	114.38	2.61
137	5298	5332	519	2492	0.00	38.10	164.87
138	5300	5356	506	2849	269.17	360.76	239.83
139	5325	5347	504	2491	153.34	34.03	0.00
140	5350	5356	502	312	44.02	32.33	0.00
141	5356	5367	501	2492	113.48	75.89	0.00
142	5352	5372	505	2492	0.00	24.62	118.01
143	5367	5385	916	2492	78.03	135.96	96.97
144	5373	5391	499	2492	82.01	1.06	0.00
146	5396	5402	915	1911	0.89	49.41	72.68
147	5402	5410	919	3232	22.20	62.73	68.95
148	5410	5418	918	514	48.56	62.70	59.94
149	5417	5431	925	3055	0.00	15.06	103.86
150	5418	5432	926	1042	102.91	98.46	3.04

3500- 6500 mts (Uttar Dhurung)							
Sr. No.	Chainage		Daag No.	Khatian No.	Requirement of Land in Sqm		
	From	To			Temporary Requisition in Sqm (7.5m corrd. Left side area)	Permanent Acquisition in Sqm (8.0m center corrd.)	Temporary Requisition in Sqm (7.5m corrd. Right side area)
151	5431	5449	930	3076	0.00	0.00	51.80
152	5436	5447	929	1072	0.00	71.22	74.15
153	5432	5436	928	426	95.36	48.81	0.00
154	5432	5441	927	1072	9.47	0.00	0.00
155	5449	5458	933	1796	0.00	0.00	45.47
156	5448	5456	934	1042	0.00	43.30	22.74
157	5446	5454	935	826	66.00	29.83	0.00
158	5456	5469	936	1144	89.71	102.13	101.79
159	5469	5475	937	1144	53.29	50.60	40.31
160	5475	5493	1149	812	119.63	134.50	32.83
161	5475	5497	1147	1401	0.00	6.15	102.15
162	5493	5497	1148	1913	0.00	32.61	67.81
163	5486	5510	962	80	133.84	46.51	0.00
164	5503	5539	963	62	186.14	288.14	233.28
165	5528	5549	960	1955	105.56	10.24	0.00
166	5539	5549	966	2528	0.00	69.74	184.80
167	5549	5579	967	2528	212.53	241.93	193.03
168	5579	5618	970	2528	274.73	311.02	272.51
169	5583	5592	1062	2426	0.00	0.00	21.65
170	5627	5638	1041	2426	22.47	0.00	0.00
171	5618	5627	1042	2426	148.27	72.14	0.92
172	5623	5628	1043	2530	0.00	9.26	51.48
173	5627	5644	1044	2531	17.77	125.13	120.02
174	5645	5662	1045	2531	0.00	6.05	83.59
175	5644	5652	1046	2531	152.18	67.82	0.79
176	5664	5668	1047	2426	3.64	0.00	0.00
177	5652	5694	1048	2426	224.36	331.30	344.64
178	5684	5693	1032	2498	13.92	0.00	0.00
179	5694	5708	1031	1806	143.59	101.39	1.55
180	5708	5719	1030	1806	1.92	98.12	186.03
181	5706	5709	1049	2426	0.00	0.00	2.49
182	5704	5710	1026	591	9.02	0.00	0.00
183	5732	5735	1028	1804	0.00	0.00	1.01
184	5719	5746	1027	591	157.55	197.36	63.59
185	5719	5757	1024	333	171.50	17.36	0.00
186	5746	5759	1022	331	97.69	102.05	97.71
187	5747	5755	1954	117	0.00	0.00	16.82
188	5759	5792	1978	180	140.27	263.81	332.50
189	5792	5807	1979	3104	33.93	117.76	122.51
190	5783	5797	1980	3103	74.32	4.12	0.00
191	5807	5823	1981	1504	116.51	125.29	119.80
192	5823	5836	1982	3283	97.12	109.44	70.95

3500- 6500 mts (Uttar Dhurung)							
Sr. No.	Chainage		Daag No.	Khatian No.	Requirement of Land in Sqm		
	From	To			Temporary Requisition in Sqm (7.5m corrd. Left side area)	Permanent Acquisition in Sqm (8.0m center corrd.)	Temporary Requisition in Sqm (7.5m corrd. Right side area)
193	5837	5859	1984	1914	0.00	42.07	124.80
194	5836	5845	1983	3287	116.55	70.13	0.81
195	5850	5891	2153	2539	318.45	325.65	295.94
196	5891	5920	2152	3150	211.45	232.58	219.92
197	5924	5927	2131	2539	0.00	0.00	1.64
198	5920	5931	2151	448	147.78	79.99	6.65
199	5933	5938	2150	2160	6.35	0.00	0.00
200	5930	5964	2132	1401	256.15	267.93	238.64
201	5955	5960	2134	2538	0.00	0.00	6.30
202	5964	5997	2135	2538	184.28	267.47	245.91
203	5989	6005	2137	709	65.81	0.42	0.00
204	5997	6033	2136	789	269.51	287.43	269.42
205	6033	6062	2125	424	129.64	229.13	219.85
206	6054	6074	2119	2151	0.00	33.12	128.51
207	6053	6071	2124	1329	90.71	4.59	0.00
208	6066	6081	2120	2314	132.14	116.27	14.88
209	6074	6077	2118	1329/1756	0.00	0.00	6.63
210	6066	6100	2113	2151	23.40	155.79	254.28
211	6084	6090	2121	1756	9.36	0.00	0.00
212	6100	6120	2112	243	267.31	153.14	20.99
213	6111	6135	2110	2740	0.00	12.53	120.72
214	6120	6139	2111	2740	30.09	141.19	72.30
215	6128	6129	2192	243	0.17	0.00	0.00
216	6150	6160	2106	3310/3319	0.00	0.00	31.96
217	6139	6149	2107	3249/3310	158.97	85.31	94.43
218	6149	6158	2100	3119	2.57	70.05	50.84
219	6147	6149	2212	1902	0.63	0.00	0.00
220	6158	6170	2213	3249/3321	186.23	96.45	8.92
221	6170	6194	2104	2291	169.57	187.45	184.29
222	6194	6227	2218	1093	262.18	270.19	244.34
223	6227	6239	2237	2152	2.33	93.28	163.39
224	6239	6250	2217	2152	173.67	85.32	0.54
225	6250	6274	2238	2152	94.92	191.20	258.61
226	6274	6306	2239	1291	221.73	243.62	159.36
227	6296	6316	2240	2576	97.71	14.10	0.00
228	6306	6337	2242	2152	181.41	244.56	281.57
229	6337	6373	2256	2631	263.33	288.85	278.41
230	6373	6409	2258	2629	270.40	288.47	274.29
231	6409	6434	2259	2629	87.93	211.97	312.89
			Total Area in Sq m=		22202.62	23926.74	22699.33
			Total Area in Acre=		5.488	5.914	5.610

6500- 8500 mts (Char Dhurung)							
Sr. No.	Chainage		Daag No.	Khatian No.	Requirement of Land in Sqm		
	From	To			Temporary Requisition in Sqm (7.5m corrd. Left side area)	Permanent Acquisition in Sqm (8.0m center corrd.)	Temporary Requisition in Sqm (7.5m corrd. Right side area)
1	6434	6450	153	1	118.57	122.524	115.65
2	6450	6526	56	60	713.41	610.870	430.08
3	6531	6557	87	9	261.31	212.320	140.47
4	6526	6531	88	11	6.26	36.424	34.90
5	6524	6566	89	11	33.68	73.875	128.99
6	6566	6596	90	35	225.18	238.450	223.19
7	6596	6644	91	8	361.58	383.800	358.05
8	6644	6674	92	8	225.76	241.870	227.74
9	6674	6716	93	8	308.83	331.540	304.75
10	6716	6720	94	1	33.06	31.010	33.06
11	6720	6723	95	1	24.02	26.290	25.14
12	6723	6752	110	8	218.27	231.990	210.35
13	6752	6775	112	64	166.57	181.820	180.85
14	6775	6797	113	8	164.43	175.140	163.98
15	6797	6835	114	8	288.05	307.890	289.27
16	6835	6876	115	20	309.66	329.050	307.32
17	6876	6926	117	1\25	372.35	399.050	375.87
18	6926	6974	120	25	363.25	382.780	354.46
19	6974	7035	121	25	454.74	484.810	454.30
20	7035	7038	123	1	25.09	26.822	25.19
21	7038	7216	150	65	1339.54	1428.800	1339.45
22	7216	7335	151	65	891.76	948.970	887.57
23	7335	7458	594	59	557.16	990.290	1289.92
24	7458	7582	593	59	1074.45	968.150	569.69
25	7538	7582	592	59	208.31	14.920	0.00
26	7582	7776	595	59	1441.34	1550.670	1465.19
27	7776	7901	614	71\59	956.31	1001.940	922.65
28	7901	8049	615	71	1111.11	1184.940	1111.75
29	8049	8058	616	71	68.94	73.280	66.58
30	8058	8061	623	71	19.85	20.550	20.72
31	8061	8089	624	56	207.71	223.740	211.83
32	8089	8101	625	56	93.71	100.920	95.66
33	8101	8118	626	56	122.22	131.010	123.00
34	8118	8171	629	56	89.37	0.000	0.00
35	8118	8170	630	17	303.60	418.580	247.23
36	8117	8169	631	32	0.00	0.000	139.28
37	8170	8210	635	3	298.23	318.310	296.86
38	8210	8215	637	58	33.08	40.489	44.37
39	8215	8249	650	29	270.62	99.010	0.00
40	8215	8239	649	57	9.25	193.210	268.15
41	8251	8292	661	49	313.12	328.440	301.57
42	8292	8309	763	42	120.03	129.000	121.68

6500- 8500 mts (Char Dhurung)							
Sr. No.	Chainage		Daag No.	Khatian No.	Requirement of Land in Sqm		
	From	To			Temporary Requisition in Sqm (7.5m corrd. Left side area)	Permanent Acquisition in Sqm (8.0m center corrd.)	Temporary Requisition in Sqm (7.5m corrd. Right side area)
43	8309	8335	663	32	198.15	209.080	192.54
44	8337	8381	675	73	244.61	1.020	0.00
45	8335	8377	676	57	79.40	334.130	194.91
46	8332	8372	677	23	0.00	0.000	110.59
47	8377	8485	716	49	500.13	858.340	941.54
48	8485	8500	717	29	310.16	129.960	0.00
49	8469	8501	718	23	97.45	0.000	0.00
50	8501	8556	732	48	238.85	0.000	0.00
51	8510	8559	733	34	153.77	151.740	0.00
52	8500	8560	734	34	29.55	329.090	481.92
53	8560	8581	749	2	146.53	165.676	160.64
			Total Area in Sq m=		16202.38	17172.58	15988.90
			Total Area in Acre=		4.005	4.244	3.952

11000- 14000 mts (Khuduk Khali)							
Sr. No.	Chainage		Daag No.	Khatian No.	Requirement of Land in Sqm		
	From	To			Temporary Requisition in Sqm (7.5m corrd. Left side area)	Permanent Acquisition in Sqm (8.0m center corrd.)	Temporary Requisition in Sqm (7.5m corrd. Right side area)
1	11030	11278	5001	1469/1	1861.79	1976.722	1842.13
2	11278	11305	5008	2	221.54	222.897	196.19
3	11305	11338	5009	2	238.02	261.728	246.90
4	11327	11344	5029	1	0.00	2.510	72.52
5	11338	11375	5026	1	182.28	294.760	311.40
6	11375	11427	5025	1	395.68	410.300	370.54
7	11427	11452	5022	1	191.14	206.190	190.59
8	11452	11468	5021	1	114.81	126.840	124.48
9	11468	11518	5018	1	363.39	399.380	379.13
10	11518	11567	5017	1	381.81	393.920	365.01
11	11567	11609	5010	1	382.75	329.160	213.86
12	11599	11624	5015	1	0.00	9.340	121.93
13	11609	11678	5011	1	518.65	546.710	421.90
14	11678	11703	5014	1	54.00	196.710	343.05
15	11684	11690	5012	1	10.33	0.000	0.00
16	11703	11734	5013	1	356.73	247.120	68.29
17	11734	11746	5050	1479	91.15	101.730	101.70
18	11746	11759	5051	1479	97.67	101.000	89.87
19	11759	11765	5052	1481/148	23.77	47.270	64.90
20	11763	11784	5702	1	144.88	10.650	0.00
21	11765	11786	5703	1	5.53	155.140	160.31
22	11784	11800	5712	243	89.78	0.000	0.00

11000- 14000 mts (Khuduk Khali)							
Sr. No.	Chainage		Daag No.	Khatian No.	Requirement of Land in Sqm		
	From	To			Temporary Requisition in Sqm (7.5m corrd. Left side area)	Permanent Acquisition in Sqm (8.0m center corrd.)	Temporary Requisition in Sqm (7.5m corrd. Right side area)
23	11786	11800	5711	243	20.97	112.090	100.48
24	11800	11882	5713	1366	653.21	658.520	580.20
25	11882	11920	5715	540	278.31	303.520	291.19
26	11920	11961	5716	142	308.94	322.810	231.94
27	11961	11969	5718	1151	84.76	70.120	66.77
28	11967	11986	5717	510	83.17	4.970	0.00
29	11969	11986	5723	510	31.50	135.360	189.82
30	11949	11956	5722	142	17.26	0.000	0.00
31	11986	12010	5724	510	179.49	192.340	171.53
32	12010	12025	5727	724	134.10	117.490	104.87
33	12025	12049	5729	724	147.82	187.470	130.00
34	12013	12026	5728	606	48.68	0.000	0.00
35	12049	12069	5730		111.38	160.450	154.67
36	12086	12105	5790	1483	139.40	151.420	129.75
37	12074	12100	5744	605	6.48	117.550	140.37
38	12069	12086	5743	833	0.00	21.750	156.25
39	12100	12107	5754		0.00	0.000	8.06
40	12105	12111	649	1	64.93	50.360	38.32
41	12096	12117	648	63	98.70	6.940	0.00
42	12111	12194	650	935	499.17	663.680	599.97
43	12194	12207	651	733	222.89	90.980	0.00
44	12207	12237	657	1252	229.81	246.860	231.76
45	12237	12262	658	1252	188.27	197.930	183.72
46	12262	12315	659	31	395.60	423.760	399.05
47	12315	12373	660	1258	429.11	462.240	437.37
48	12373	12433	661	978	456.06	483.870	451.42
49	12433	12520	662	1252	649.07	690.710	646.70
50	12520	12600	663	1258	598.93	639.330	599.63
51	12600	12686	664	978	645.59	688.110	644.22
52	12686	12727	665	14	307.01	328.500	310.58
53	12727	12755	666	1299	156.59	110.450	116.70
54	12755	12769	2303	1299	150.11	227.210	207.94
55	12769	12817	1875	1165/531	299.63	329.840	313.49
56	12788	12795	1876	59	56.58	56.480	50.16
57	12817	12838	1878	1165	176.23	170.070	148.27
58	12838	12880	1880	528	319.88	333.220	303.79
59	12880	12895	1881	1163	110.89	115.850	110.65
60	12895	12926	1884	1163	131.63	249.600	231.47
61	12899	12928	1885	1163	99.70	0.000	0.00
62	12926	12956	1891		232.74	243.830	82.21
63	12923	12953	1892		0.00	1.320	144.88
64	12956	13009	1894	542	390.83	417.400	393.64
65	13009	13047	1896	542/978	286.60	305.430	284.88

11000- 14000 mts (Khuduk Khali)							
Sr. No.	Chainage		Daag No.	Khatian No.	Requirement of Land in Sqm		
	From	To			Temporary Requisition in Sqm (7.5m corrd. Left side area)	Permanent Acquisition in Sqm (8.0m center corrd.)	Temporary Requisition in Sqm (7.5m corrd. Right side area)
66	13047	13083	1898	1258	281.02	291.390	268.31
67	13083	13095	1900	59	104.63	94.400	77.69
68	13095	13105	1875	1165/531	80.80	80.160	69.94
69	13105	13118	1903	530	98.37	107.090	88.10
70	13118	13131	1908	1299	0.20	100.400	169.37
71	13131	13211	1907	528	480.18	618.650	445.36
72	13133	13151	1909	14	0.00	2.650	97.58
73	13151	13160	1911	978	0.00	0.000	9.75
74	13213	13269	1905	1319	627.05	445.840	223.02
75	13207	13245	1906	528	0.00	34.090	203.60
76	13269	13276	2032	4	53.91	57.610	53.94
77	13276	13289	1922	1322	39.22	101.560	94.67
78	13281	13294	1923	21	56.62	0.000	0.00
79	13289	13307	1933		137.76	150.090	143.16
80	13307	13317	1944		12.49	78.690	76.33
81	13317	13325	1950	796	63.53	63.050	57.73
82	13325	13345	1951	598	147.95	163.860	155.32
83	13345	13362	1958	496	125.67	133.250	125.11
84	13362	13380	1957	496	135.15	145.100	136.45
85	13380	13398	1966	469	33.88	134.390	152.96
86	13384	13404	1965	638	113.77	26.660	0.00
87	13397	13412	1971	526	0.00	4.120	72.96
88	13400	13418	1972	1	64.11	133.260	59.90
89	13406	13422	1973	526	68.07	2.120	0.00
90	13421	13435	1974	634	126.05	112.450	34.21
91	13414	13431	1975	1403	0.00	25.370	93.84
92	13435	13470	1983	654	259.91	278.580	264.65
93	13470	13485	1984	824	114.38	121.740	113.88
94	13485	13505	1995	326	146.26	155.520	145.34
95	13505	13522	1997	74	127.11	140.250	132.96
96	13522	13541	1998	21	143.17	147.850	137.48
97	13541	13559	2007	469	139.06	151.060	142.88
98	13559	13567	2008	632	60.12	64.430	61.50
99	13567	13576	2009	632	64.62	69.730	65.15
100	13576	13585	2017	302	65.92	68.850	61.22
101	13585	13593	2018	302	64.46	69.600	69.95
102	13593	13609	2019	650	117.15	127.490	120.86
103	13609	13616	2026	633	49.53	52.690	49.16
104	13616	13625	2027	460	67.38	71.600	66.85
105	13625	13629	2176	1158	26.96	31.580	31.30
106	13671	13716	2206	469	61.52	0.000	0.00
107	13629	13819	2207	469	701.38	1449.400	1509.16
108	13819	13847	2205	469	873.47	252.490	0.00

11000- 14000 mts (Khuduk Khali)							
Sr. No.	Chainage		Daag No.	Khatian No.	Requirement of Land in Sqm		
	From	To			Temporary Requisition in Sqm (7.5m corrd. Left side area)	Permanent Acquisition in Sqm (8.0m center corrd.)	Temporary Requisition in Sqm (7.5m corrd. Right side area)
109	13875	13987	2202	824	320.32	60.430	0.00
110	13982	14014	2203	1	246.49	258.245	235.44
111	13847	13974	2204	469	672.03	973.740	384.91
112	13627	13692	2208	21	0.00	86.770	473.70
113	13692	13771	2209	21	0.00	0.000	294.81
114	14014	14035	2268	1	167.82	168.507	149.82
			Total Area in Sq m=		22507.20	24036.71	22491.74
			Total Area in Acre=		5.563	5.941	5.559

14000- 17000 mts (Shekhar khil)							
Sr. No.	Chainage		Daag No.	Khatian No.	Requirement of Land in Sqm		
	From	To			Temporary Requisition in Sqm (7.5m corrd. Left side area)	Permanent Acquisition in Sqm (8.0m center corrd.)	Temporary Requisition in Sqm (7.5m corrd. Right side area)
1	14035	14054	15984	1614	137.76	155.39	155.80
2	14061	14144	15824	1543	617.00	651.03	215.34
3	14060	14146	15825	396	0.00	12.47	409.62
4	14146	14147	15829	4	29.7689	30.07	23.54
5	14147	14200	15831	73	373.94	29.43	0.00
6	14150	14301	15854	598	0.00	-	281.93
7	14148	14231	15830	394\598	0.00	586.80	711.35
8	14225	14260	15832	323	321.41	280.22	0.00
9	14225	14323	15835	1543	594.79	170.30	0.00
10	14260	14301	15833	323	0.00	244.63	134.58
11	14300	14318	15834	597	0.00	55.60	129.78
12	14319	14346	15837	44	139.28	213.66	205.00
13	14346	14360	15758	96	151.84	114.14	111.02
14	14360	14376	15757	1408	124.41	124.84	117.76
15	14394	14412	15754	73	0.00	0.00	32.61
16	14376	14425	15755		359.14	392.94	342.16
17	14424	14442	15861	16	0.00	61.31	131.61
18	14426	14438	15867	666	87.28	40.55	0.00
19	14442	14456	15863	666	0.00	10.19	106.80
20	14435	14448	15866	666	89.79	75.97	0.00
21	14448	14462	15753	666\16\1529	121.03	107.04	6.03
22	14462	14501	15864	666	57.30	303.09	369.36
23	14501	14507	15865	1529	260.50	63.40	0.00
24	14508	14527	15733	1543	144.45	0.00	0.00
25	14510	14526	2473	363	12.47	139.16	138.18
26	14523	14557	2472	1543	0.00	32.84	172.55
27	14529	14546	2464	1516	152.18	123.82	8.53

14000- 17000 mts (Shekhar khil)							
Sr. No.	Chainage		Daag No.	Khatian No.	Requirement of Land in Sqm		
	From	To			Temporary Requisition in Sqm (7.5m corrd. Left side area)	Permanent Acquisition in Sqm (8.0m center corrd.)	Temporary Requisition in Sqm (7.5m corrd. Right side area)
28	14546	14584	2465	77	273.13	303.24	241.27
29	14584	14605	2466	73	34.26	158.94	156.00
30	14660	14674	5271	363	0.00	0.00	47.18
31	14600	14622	2467		0.00	39.00	155.75
32	14609	14647	5269	363	352.53	305.90	112.18
33	14621	14642.98	2521		0	0	47.1552
34	14647	14662	5270	425		237.64	211.42
35	14626	14676	2463	363\425\828	313.41	74.91	0.00
36	14675	14679	2649	1	31.84	36.72	36.80
37	14679	14708	2522	750	211.01	224.96	210.09
38	14708	14740	2523	170	246.10	261.44	244.60
39	14744	14760	2534	1279	0.00	51.05	117.45
40	14740	14750	5209	1279	107.20	67.06	0.00
41	14755	14770	2536	633	103.11	119.58	108.76
41	14751	14759	2537	1279	11.71	0.00	0.00
42	14770	14795	2538	1535	179.06	197.53	191.06
43	14790	14799	2539	865	18.13	0.00	0.00
44	14795	14804	2540	589	52.29	73.70	70.54
45	14806	14814	2541	375	0.00	52.65	81.94
46	14799	14809	2542	1622	0.00	30.11	75.78
47	14814	14827	2543	123	95.25	97.18	80.46
48	14827	14837	2544	1407	73.16	83.16	85.31
49	14837	14868	2545	807	239.06	250.16	235.93
50	14868	14895	2546	475	82.43	191.15	86.01
51	14862	14886	2547		111.43	6.82	0.00
52	14895	14907	5210	1279	0.00	96.24	184.61
53	14906	14910	2552	1279	0.00	0.00	5.36
54	14887	14896	2550	1279	63.90	12.35	0.00
55	14910	14918	2553	1373	0.00	0.00	35.39
56	14907	14914	2575	1	52.58	59.07	51.50
57	14901	14911	2582	622	18.18	0.00	0.00
58	14914	14939	2581	1536	229.09	193.76	25.57
59	14924	15020	2580	1552	0.00	297.62	674.07
60	14945	14970	2585	622	331.58	199.08	35.37
61	14991	15015	2588	154	182.38	174.36	41.93
62	15008	15030	2589	1536	229.09	193.76	25.57
63	15020	15031	2579	1552	0.00	0.00	25.85
64	15025	15046	2578	426	72.35	172.23	158.68
65	15030	15040	2594	1552	0.00	0.00	22.04
66	15046	15076	2595	426	222.28	243.68	234.46
67	15076	15150	2598	1129	564.44	589.79	539.89
68	15150	15176	5026	753	335.42	211.75	63.79

14000- 17000 mts (Shekhar khil)							
Sr. No.	Chainage		Daag No.	Khatian No.	Requirement of Land in Sqm		
	From	To			Temporary Requisition in Sqm (7.5m corrd. Left side area)	Permanent Acquisition in Sqm (8.0m center corrd.)	Temporary Requisition in Sqm (7.5m corrd. Right side area)
69	15176	15193	5027	753	131.28	136.86	119.11
70	15193	15213	5028	753	159.05	156.83	137.32
71	15213	15284	18436	599	382.64	570.75	686.71
72	15284	15291	18437	1	67.27	56.29	43.45
73	15291	15311	18438	1537	144.85	139.67	122.82
74	15311	15340	19081	294	203.16	231.07	167.05
75	15330	15347	19082	302	94.16	18.62	0.00
76	15340	15345	18443	1537	33.30	36.18	30.69
77	15345	15398	18450	1127\1128	396.11	424.47	399.10
78	15398	15421	18447	987	175.71	182.64	164.23
79	15421	15443	18454	1605	156.02	177.34	179.06
80	15443	15461	18455	1128	138.31	145.62	135.29
81	15461	15487	18468	1127	195.03	210.05	198.17
82	15487	15515	18476	1123	203.53	222.98	205.49
83	15515	15534	18480	1072	116.12	150.72	142.24
84	15528	15550	18481	1072	4.44	115.08	159.35
85	15527	15539	18463	1072	31.51	0.00	0.00
86	15539	15558	18482	1072	139.11	48.05	0.00
87	15554	15578	18487	351	187.82	192.43	177.74
88	15578	15608	19027	351	225.24	240.96	227.85
89	15608	15644	18491	584	273.45	287.84	262.89
90	15644	15664	18496	1128	149.48	158.82	150.43
91	15664	15695	18499	946\808	235.99	245.71	225.33
92	15695	15714	18504	957	128.42	156.13	150.92
93	15716	15724	18505	957	18.13	0.00	0.00
94	15714	15736	18507	1572	164.52	154.66	45.74
95	15707	15727	18508	957	109.90	17.70	0.00
96	15736	15776	18511	1212	314.98	320.06	288.81
97	15776	15873	18512	1127\1128	606.59	775.10	783.33
98	15848	15873	18515	1208	0.00	0.00	50.52
99	15873	15883	18555	1	57.53	54.30	51.18
100	15883	15915	18553	909	260.09	280.34	264.65
101	15915	15934	18559	1212	145.83	153.24	149.06
102	15934	15951	18560	715	127.96	133.05	115.84
103	15951	15971	18564	977\545	146.99	164.16	159.87
104	15971	15988	18565	1208	130.55	132.85	120.64
105	15988	16004	18567	1212	118.97	131.74	125.77
106	16004	16024	18570	957	148.74	131.74	145.41
107	16024	16030	18571	946\808	50.08	50.87	48.12
108	16030	16041	18573	431	80.10	87.06	83.01
109	16041	16076	18575	909	197.58	278.82	262.74
111	16076	16107	18580	753\331	230.23	244.87	228.59

14000- 17000 mts (Shekhar khil)							
Sr. No.	Chainage		Daag No.	Khatian No.	Requirement of Land in Sqm		
	From	To			Temporary Requisition in Sqm (7.5m corrd. Left side area)	Permanent Acquisition in Sqm (8.0m center corrd.)	Temporary Requisition in Sqm (7.5m corrd. Right side area)
112	16107	16128	18581	1212	154.98	174.37	157.17
113	16126	16135	19056	331	15.85	0.00	0.00
114	16128	16145	18587	731	117.41	129.25	125.57
115	16145	16166	18586	1208	157.38	169.70	162.83
116	16166	16191	18593	584	136.20	204.83	208.77
117	16184	16229	18594	645	224.75	94.35	3.15
118	16203	16304	18595		606.63	798.94	824.95
119	16304	16307	18597	4	41.04	29.17	46.66
120	16307	16346	18605	5269	262.37	313.04	332.08
121	16300	16306	18603	957\1268	0.00	0.00	12.08
122	16346	16365	18685	5269	152.15	155.40	332.08
123	16365	16377	19125	1603	86.46	93.52	88.76
124	16377	16385	18607	1	62.36	60.95	52.57
125	16385	16629	18656	1233	1259.04	1479.36	1419.94
126	16515	16572	18654	1233	222.95	196.13	194.83
127	16525	16559	18655	1233	323.38	275.87	161.30
128	16617	16636	18657	1232	0.00	5.48	87.32
129	16623	16630	4758	576	8.42	0.00	0.00
130	16629	16682	4759	1232	404.88	444.39	434.01
131	16673	16687	4760	977	0.00	0.00	48.75
132	16679	16703	4761	977	181.37	104.41	0.75
133	16695	16733	4762	554	200.58	280.62	280.79
134	16733	16739	4878	1	46.11	51.87	45.32
135	16739	16800	4867	1376	538.06	487.09	298.63
136	16800	16845	4866		244.50	355.96	498.88
137	16845	16913	4865	1376\1312	512.87	546.42	510.24
138	16913	16920	4863	4	54.40	57.03	54.51
139	16920	16932	4859	1601	105.60	94.84	91.04
140	16930	16942	4858	331	28.16	0.00	0.00
141	17053	17090	4811	1378	312.83	42.00	0.00
142	17049	17139	4849	1312	582.82	667.75	447.44
			Total Area in Sq m=		22535.07	24053.88	22452.24
			Total Area in Acre=		5.570	5.945	5.549

Land Details for CTMS

Serial No	Daag No	Khatian No	Permanent Acquisition for CTMS in Sq. m
1	4785		294
2	4803		834
3	4805		461
4	4806		727
5	4807		101

6	4808		505
7	4809		565
8	4810	1378	479
9	4811	1378	270
10	4849	1312	282
11	4851	1376\1311	2808
12	4852		1063.00
13	4853	190	959.00
14	4854	182	831.00
15	4855	182	776.00
16	4857	1377	480
17	4858	331	733.00
18	4859	1601	233
19	4860	1377	43
20	4915		653.00
21	4916		1276.00
22	4937	1517	189.00
23	5211	1311	1481
	Total Area in Sqm=		16043
	Total Area in Acre=		**3.965**

Annex 3

Mouza Rates of *Kutubdia* and *Banskhali* Upazilas

Annex 3: Mouza Rates of Kutubdia and Banskhali Upazila

বাঁশখালী সাব-রেজিস্ট্রী অফিসের ২০১৭-২০১৮ সালের মৌজা ওয়ারী শ্রেণী ভিত্তিক প্রতি শতাংশে জমির বাজার মূল্য তালিকা

ক্রমিক নং	মৌজার নাম	নাল	বাড়ী ভিটি	বিল/ডোবা/জলা/নালা/ছড়া	পুকুর/খাই/ডোবা	দোকান	বাগান	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
০১	উত্তর জলদী (পৌঃ)	১,০৬,৯৫৪	২,২৮,৪৬৬	৫৭,২২১	২,৬০,০৬৪	২০,৫৪,২৬৪	১,০৫,২৭১	১,৯৯,০৭০				১৭০১১১				১৪০৫৫
০২	দক্ষিণ জলদী (পৌঃ)	১,২৯,০৩০	৩,০৭,১০৭	৮০,৯৯৩	১,৬১,২৮০	৪,৩২,৮৫৭	১,৪৫,১২৮	৬০,০০০		৭৭-৮৪,০০০		২০৯১৫৫			১০০০০	
০৩	[illegible] (পৌঃ)	৮৭,০৫৭	৭২,০০০	৫৭,১৭৫	৭২,০০০											
০৪	উত্তর জলদী (সাবেক)	৯,৫৫৫	১৮,৬২০	৩,৪৭৭	৯,২০২				৮,৫৫৭						৩৮,১৪৪	
০৫	দক্ষিণ জলদী সাবেক	৬,৬৬৭	১০,৭২৪	৩,১৬৫	১০,৬৮৯			৫,৯০৪								
০৬	জঙ্গল জলদী সাবেক	১০,৯৬২	১২,৮৫৭	১,৩২৩	৪,০০০	৩২,৫০০	৭,০০০									
০৭	[illegible]	১৭,৫০১	৩,৫২০	১,৩০৩	১,৩০০				৫,৭৪৪						১৫৪৭১	
০৮	ইলশা	৩২,৩৯৪	৩৯,১৭০	২৭,৮০০	৩৩,৬৭৭	১২,৬৬,৮৫১										
০৯	কোকদন্ডী	১,৩৬,১০৪	২,৭৫,৩৩৫	৮০,০০০	১,৫৫,৩২০	১২,০০,০০০	১,৫৪,০০০						১৩,১৬০			
১০	কালীপুর	৪৪,৫৬৪	১,১১,৮৬০	৫৪,০২৩	৮৮,৫৬২	৪,৫২,২৭০	৭২,৫৭৪	৭৮,৫৩০	১০,০০০				২৩,৪০০	৬২,০০০		
১১	[illegible]	১৮,২৫৭	১৬,৩৩৫	৪,৬৬৭	১০,০০০											
১২	[illegible]	২৪,২৫৭	২৬,২৭১	১৪,৯৫০	২৭,৯১৬					৮,০০০						
১৩	[illegible]	২৩,০৬৫	২২,৫০০	২,২২৭	২৪,৩৩৭	২৭,০০০										
১৪	[illegible]	১০,৬৭৬	১০,৬২৫	৩,৩২১	৯,২২০			৬,৯৫০		৯,৫০৭						
১৫	[illegible]	১,৫০০	২,৫০০	৯৫০	১১০০											
১৬	[illegible]	২২,৭৮২	৮,৯৬৬	১৬,৯৫৯	৯,৩৩৮											
১৭	[illegible]	১৬,৫৫৬	১১,৬৪৫	৩,৪৪৪	১৭,১৬৭	৫২,০০০		৩৯,৫৬৯		১১১৬৩১	৪,৯৯৯					
১৮	[illegible]	৬৯,০৩৫	১,৬০,৮৭৭	২,২৮,৭২০	৭৫,১৬৭	৫,৫৬,৫০০		১০,০০০						০০০০০		
১৯	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]											
২০	চন্দ্রপুর	৪৪,৫১৮	৬১,৮০৬	১,১১,৬৬৭	৫০,০০০		৫০,৬৫৫									
২১	চাঁদপুর/[illegible]	৭৯,০১০	১৯,৮০৯	৪০,৯১৮	১,০১,২৩৮		২৮,০০০					৮৬,৪৫২				
২২	চর [illegible]	৯,০০০	৩,০০০	১,৪২৯	১,৪৫০											
২৩	[illegible]	৫৭,৩৩৮	৬৬,৭৮১	১৯,০১৪	৮৭,৩৩৪	৪০,৫০০	২০,২৬৮	৪৮,১২৮								৬৪০০০
২৪	[illegible]	২৬,৪৭৭	৪৫,০৯২	৫,৪২০	৩৮,০৮০	৩৫,০০০						৭৭-২০,০০০				
২৫	ছোট ছনুয়া	১০,৭৪০	১০,৭৫৯	৫,৫০০	১০,৮০৯					১২০৫৬	২,৫০০		১১,৫৮৮	৯,৯৫৭		
২৬	[illegible]	২৩,৮৯২	৪২,৮৬৪	৫,৬৩৪	১,০৬,৯৬০			২০,০০০		৬,০০০						
২৭	জঙ্গল সাধনপুর	৩৯,৮০১	৩২,০০০	১২,০০০	৭,০০০											
২৮	জঙ্গল গুনাগরী	৭৬,৩৫০	১,২৫,৬৪৮	৫৫,৮০৩	৮,০০০		৩৫০০০									
২৯	জঙ্গল কোকদন্ডী	৪৪,৮৭৮	৪৫,০২৯	৫১,০৭২	৮,০০০		২৬,৬৬৭	৫৭,০০০								
৩০	জঙ্গল কালীপুর	১৯,১৭০	১২,৩১৩	২৮,৫২৮	১,৫০০				৭,০২০							
৩১	জঙ্গল বৈলছড়ী	১৮,৩২৮	১৭,০০০	১৭,০৮৩	১,৫০০		২৩,০০০	৮,৫০০	১,৯১৬							
৩২	জঙ্গল শিলকুপ	১১,১৮৭	১১,২০০	৫,০০০	১,৪০০				৭০৯৯				১০০০০০		২২৭৫০	
৩৩	জঙ্গল চেচুরিয়া	৬,০০০	৪,১০০	৬,৫১৭	১,৩০০		১২,৮২১		২,১১৫							
৩৪	জঙ্গল [illegible]	১১,৫৪০	৬,২০০	১১,৬৬০	১,৩০০			১৭,৫০০	৩,৭১১	২৭৪ ১০,৬৬৭		১১০০০	২০,৬৬২			
৩৫	জঙ্গল নাপোড়া	২,১৫৪	৩,২৬৬	৭,৫০০	১,৫০০		৮,৮৬৬		১২,০০০			৫,০০০				১৫০০০
৩৬	জঙ্গল [illegible]	২৭,১৬৫	৩৬,১০০	৩২,৫২২	৪২,৭৫২		৩১,৬৬৭	২২,৫৪৪	৬,০৫০							
৩৭	জঙ্গল পুঁইছড়ী	১৪,২০৯	১৬,৮০২	১৪,৭৪৪	৫,০০০		৫,৯৬২					১০৯৬৬	১১,৯৫৫	২৫,৯৯৯	২৫০০	

শাহ্ রশিদিয়া এন্টারপ্রাইজ
কালীপুর, বাঁশখালী, সাব-রেজিস্ট্রি অফিস।

মোস্তাফিজুর রহমান

দলিল লিখক, সনদ নং ৩৭/০৮ ইং।
বাঁশখালী, চট্টগ্রাম।

	নাল প্রতি একর	ভিটি প্রতি একর
বড়ঘোপ	৭,৯৪,০০০	৬,৬২,৫৬০
আলী আকবর ডেইল	৩,১৬,৬৬০	২,৮৭,৪০০
কৈয়ারবিল	৩,৪০,৭৬০	২,৫৬,৫২০
লেমশীখালী	২,৭০,১২০	৩,০২,৬০০
দক্ষিণ ধুরুং	৩,৪২,০৪০	২,৫৪,২০০
উত্তর ধুরুং	২,৫৬,৫২০	২,৪৫,০৪০
চর ধুরুং	১,৪৮,৪৮০	২,৫০,০০০
রাজাখালী	৭৫,১৬০	৭৬,৮৮০

২০১৭ ও ২০১৮ সালের কুতুবদিয়া সাব-রেজিস্ট্রি অফিসের আওতাধীন মৌজা সমূহের শ্রেণী ভিত্তিক প্রতি শতকের গড় মূল্য তালিকাঃ-

মৌজার নাম	নাল ✓	ভিটি জমি	খালি গোডাউন ভিটি	দোকান ভিটি	খালি বাড়ি ভিটি	বাড়ি	পতিত/ছিলা	লবণ মাঠ ✓	পুকুর ✓	পুকুর পাড়	কারক পতিত	খাই/গর্ত	ঝাউবাগান	ডোবা	খাল	খামার ভিটি	বাগান ✓	গোয়াল গৃহ	পথ	বালুর চর ✓	ইট খোলা	নালি	মন্তব্য
বড়ঘোপ	১১৮৫০	৭৫২৭৯	৪০০০০০	৭৯৫০০০	১৪০০০০	৯১৬২১	৬৬২৮৬	৮৩১৪	৫৯০৫৬	--	--	৮৬১৫৮	১৫১২৮	★ ১০০০	--	--	--	--	--	--	--	--	
আলী আকবর ডেইল	৭৪০৯	১০০৬৫	★ ১৫৭২০	--	★ ৩২৭০	১৮০৫৭	★ ৭৭০৫	৭১৮৫	৫৪৭৫	★ ১৮৫৭	--	৮০০০	৬০০০	১০০০০	★ ৩০০০	★ ২৮০০	★ ৬১৩০	--	--	--	--	--	
কৈয়ারবিল	৮৫১৯	৮৫০০	--	--	★ ১৫০০	১২১৩৮	৪০০০	৮৩৩৮	৬২৪৩	৬০০০	--	৩০০০	--	--	--	--	★ ৭১৪৩	--	--	--	--	২০০০০	
লেমশীখালী	৭২৫৩	১১৫৪৩	--	★ ১১৬৫৫৯	★ ৩৩৬০	৯৬৬০	৫৩৩৩	৭৫৮২	৮০৯৪	৪৪৮১	★ ১৫৫০	৪১৮৩	--	★ ৬৪০০	--	★ ৪৬৬৭	--	★ ৩৬০০	--	★ ২৮৫৭	--	--	
দক্ষিণ ধুরুং	৮৫০১	১৫০০০	★ ৮০০০	৭৬০৩৩৯	★ ৬৪২০	১১৫৯২	৬৬০৯	৮০৫৫	৯২৬৮	★ ২৬৫৭	★ ৩০০০	১৫৬৬৬	--	★ ৭৮৫	--	--	★ ৭৫০০	--	--	৬২১১	--	--	
উত্তর ধুরুং	৬৪১৩	★ ৬০৫৯	--	--	★ ৪৫০০	৬৬৯০	২৫৮৮	৬১২৬	৬৬৭৭	★ ২০০০	--	৮০৫১	--	★ ৪০০০	--	--	--	--	★ ৫৯৯০	--	★ ৬১২৫	--	
চর ধুরুং	৩৭১২	--	--	--	--	★ ৫০০০	--	৬২৫০	--	--	--	--	--	★ ৮০০	--	--	--	--	--	--	--	--	
রাজাখালী	★ ১৮৭৯	--	--	--	--	--	★ ৯২০	★ ১৮৫৭	--	--	--	--	--	--	★ ১০০০	--	--	--	--	--	--	--	

প্রত্যয়ন করা যাইতেছে যে, অত্র বাজার মূল্য বিধিমালা ২০১০ এস.আর.ও নং ৩৩১/১২ এবং এস.আর.ও নং ৩২৫/১৫ মোতাবেক কুতুবদিয়া সাব-রেজিস্ট্রি অফিসের স্থানীয় অধিক্ষেত্রের আওতাভুক্ত জমির ১/০১/২০১৫ ইং হইতে ৩১/১০/২০১৬ ইং পর্যন্ত রেজিস্ট্রিকৃত সাব-কবলা দলিলের শ্রেণি ভেদে জমির পরিমাণ এবং মূল্যের উপর গড় করিয়া বাজার মূল্য নির্ধারণ করা হইয়াছে। তবে উক্ত বিধিমালা মোতাবেক যেসব শ্রেণী পূর্ববর্তী বছরের বাজার মূল্যকে বর্তমান বছরের বাজার মূল্য হিসেবে গ্রহণ করা হইয়াছে। সে গুলি তারকা (★) দ্বারা চিহ্নিত করা হয়েছে।



ERM has over 160 offices
Across the following
countries worldwide

Argentina
Australia
Belgium
Brazil
China
France
Germany
Hong Kong
Hungary
India
Indonesia
Ireland
Italy
Japan
Korea
Malaysia
Mexico
Netherlands
Peru
Poland
Portugal
Puerto Rico
Singapore
Spain
Sweden
Taiwan
Thailand
UK
USA
Venezuela
Vietnam

ERM India Private Limited
Building 10, 4th Floor
Tower A, DLF Cyber City
Gurgaon – 122 002, NCR , India
Tel: 91 124 417 0300
Fax: 91 124 417 0301

Regional Office – West
801, 8th Floor, Windfall, Sahar Plaza,
J B Nagar, Andheri (East),
Mumbai – 400 059
Tel : 022 42107373Fax: 91- 022- 4210 7474

Regional Office – West
702 Abhishree Avenue,
Near Nehru Nagar Circle,
Ambawadi Ahmedabad -380006 India
Tel: +91 79 66214300
Fax: +91 79 66214301

Regional Office -South
Ground Floor, Delta Block
Sigma Soft Tech Park
Whitefield, Main Road
Bangalore- 560 066, India
Tel: +91 80 49366 300 (Board)

Regional Office –East
4th Floor,
Asyst Park, GN-37/1, Sector-V,
Salt Lake City, Kolkata 700 091
Tel : 033-40450300

The Business of Sustainability

ERM