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Western Economic Corridor & Regional Enhancement Program (WeCARE)

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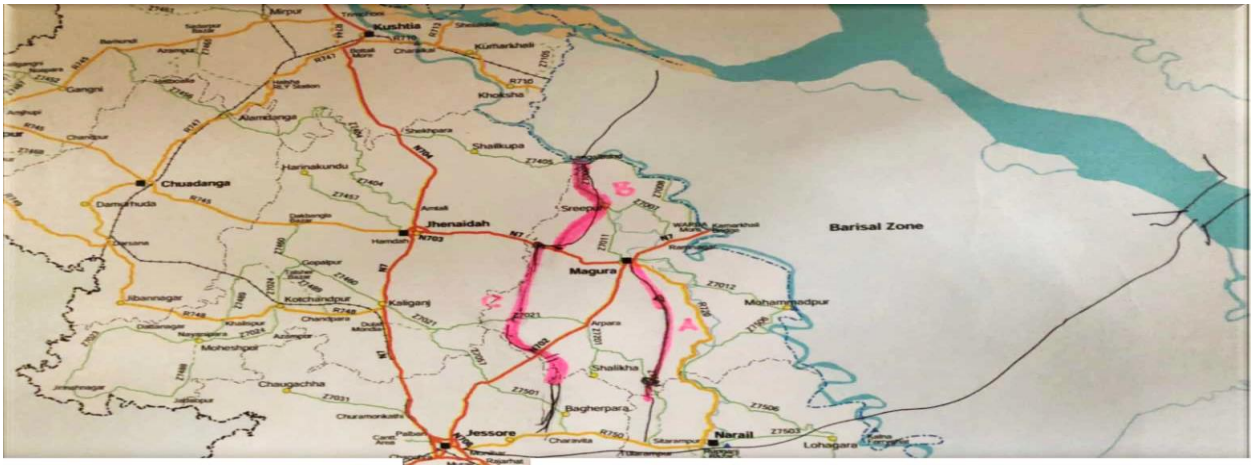

Environmental and Social Management Framework

April 2020

List of Acronyms

ADB	Asian Development Bank
AIDB	Asian Infrastructure Development Bank
ARAP	Abbreviated Resettlement Action Plan
ARIPA	Acquisition and Requisition of Immovable Property Act
BBS	Bangladesh Bureau of Statistics
BDT	Bangladeshi Taka
BMP's	Best Management Practices
BN	Bangladesh Navy
BOD	Biological Oxygen Demand
BP	Bank Policy
BP	Bank Procedures
BRE	Brahmaputra Right-bank Embankment
BWDB	Bangladesh Water Development Board
CBO	Community Based Organization
CC	Climate Change
CEAP	Construction Environmental Action Plan
CG	Coast Guard
CHT	Chittagong Hill Tract
CIIA	Cumulative and Induced Impact Assessment
CNGO	Coordinating Non-Governmental Organization
COD	Chemical Oxygen Demand
CPR	Common Property Resources
CSO	Civil Society Organizations
DAE	Department of Agriculture Extension
DCRO	Deputy Chief Resettlement Officer
DIA	Designated Implementing Agency
DIFE	Department of Inspection for Factories and Establishments
DLS	Department of Livestock Services
DoE	Department of Environment
DoF	Department of Fisheries
DPCC	District Project Coordination Committee
DSM	Design Supervision Management
EA	Environmental Assessment
ECA	Ecological Critical Area
ECA	Environmental Conservation Act
ECC	Environmental Clearance Certificate
ECoP's	Environmental Code of Practices
ECR	Environment Conservation Rules
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
EMIS	Environmental Management Information System
EMP	Environmental Management Plan
EMU	Environmental Management Unit

EMU	Environnent Management Unit
ERP	Emergency Response Plan
ES	Environmental Screening
ESA	Environmental and Social Assessment
ESCP	Environmental Social Commitment Plan
ESDU	Environmental Social Development Unit
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESMP	Environmental and Social Management Plan
ESMU	Environment and Social Management Unit
ESR	Environmental Screening Report
ESS	Environmental and Social Standards
ETP	Effluent Treatment Plant
EU	European Union
FAA	Flood affected area
FAO	Food and Agriculture Organization
FAP	Flood Action Plan
FGAP	Framework for Gender Action Plan
FGD	Focus Group Discussion
FPIC	Free, Prior and Informed Consent
FRSS	Fisheries Resource Survey System
FSECDP	Framework for Small Ethnic Community Development Plan
GAP	Gender Action Plan
GBV	Gender Based Violence
GDP	Gross Domestic Product
GDR	General Department of Resettlement
GHAB	Galda Hatchery Association of Bangladesh
GMB	Ganges, Brahmaputra and Meghna
GoB	Government of Bangladesh
GPN	Good Practice Note
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
ha	Hectare
HH	House Hold
HIES	Household Income and Expenditure Survey
IA	Information Access
ID	Identity
IDA	International Development Association
IEE	Initial Environmental Examination
IFC	International Finance Corporation
ILO	International Labor Organization
IoL	Inventory of Loss
IP	Indigenous Peoples
IPDP	Indigenous Peoples Development Plan
IPP	Indigenous Peoples' Plan
IPPF	Indigenous Peoples Planning Framework

ITLOS	International Tribunal for Law of the Sea
IUU	Illegal, Unreported and Unregulated
IWM	Integrated Water Management
JCC	Joint Coordination Centre
JVC	Joint Verification Committee
L.O.A	Length Over All
LAO	Land Acquisition Officer
LAP	Land Acquisition Plan
LGED	Local Government and Engineering Division
LGED	Local Government Engineering Department
LGI	Local Government Institution
LMP	Labour Management Procedures
LMS	Land Market Survey
LRSP	Livelihood Restoration Support Plan
M	Motorized
M&E	Monitoring and Evaluation
MCS	Monitoring, Control and Surveillance
MEF	Ministry of Economy and Finance
MIS	Management Information System
MLGRD&C	Ministry of Local Government, Rural Development and Co-operatives
MoD	Ministry of Defense
MoEFCC	Ministry of Environment, Forest and Climate Change
MoF	Ministry of Finance
MoFA	Ministry of Foreign Affairs
MoFL	Ministry of Fisheries and Livestock
MoHA	Ministry of Home Affairs
MoLE	Ministry of Labor and Employment
MoLGRDC	Ministry of Local Government, Rural Development and Co-operatives
MoRTB	Ministry of Road Transport and Bridges
MoU	Memorandum of Understanding
MPA	Multi-Phased Approach
MT	Metric Tonne
MWB	Minimum Wages Board
NATP	National Agricultural Technology Project
NGOs	Non-Government Organizations
NM	Nautical Mile
NM	Non-Motorized
NOC	No Objection Certificate
NRS	National Resettlement Specialist
O&M	Operation and maintenance
OHS	Occupational Health and Safety
OHSC	Occupational health and Safety Circle/Cell
OHSM	Occupational health and safety management
OP	Operational Policy
PA	Protected Area
PAD	Project Appraisal Document
PAH	Project Affected Households
PAP’s	Project Affected Persons

PAU	Project Affected Unit
PCU	Program Coordination Unit
PIB	Public Information Brochure
PIU	Project Implementation Unit
PMO	Project Management Office
PMU	Project Management Unit
PPE	Personnel Protective Equipment
PPR	Project Progress Report
PRA	Participatory Rural Appraisal
PSC	Project Steering committee
PVAC	Property Valuation Advisory Committee
R&D	Research and Development
RAC	Resettlement Advisory Committee
RAP	Resettlement Action Plan
RCS	Replacement Cost Study
RHD	Roads and Highways Department
ROW	Right of Way
RPF	Resettlement Policy Framework
RTIP	Rural Transport Improvement Project
SA	Social Assessment
SAE	Sub Assistant Engineer
SDE	Sub Divisional Engineer
SEA	Strategic Environmental Assessment
SEC	Small Ethnic Community
SECDP	Small Ethnic Community Development Plan
SECI	Social and Environmental Circle
SEMVPP	Small and Ethnic Minorities, Vulnerable Peoples Plan
SEP	Stakeholders Engagement Plan
SIA	Social Impact Assessment
SIMP	Social Impact Management Plan
SMF	Social Management Framework
SMP	Social Management Plan
TBD	To Be Determined
TDP	Tribal People Development Plan
TIG	Technical Implementation Group
ToC	Table of Contents
ToR	Terms of Reference
TPDR	Technical Publication Deficiency Report
TPP	Tribal People Planning
UNCED	United Nations Conference on Environment and Development
UNCLOS	United Nations Conference on Law of the Sea
UPCC	Upazila Project Coordination Committee
USD	United States Dollar
VLD	Voluntary Land Donation
WB	World Bank
WBG	World Bank Group
WeCARE	Western Economic Corridor and Regional Enhancement Program

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Executive Summary

Background

The Government of Bangladesh (GoB) through the Ministry of Finance (MoF) has requested the World Bank (WB) to support the preparation and implementation of the Western Economic Corridor and Regional Enhancement Program (WeCARE Program) with the Roads and Highways Department (RHD) and the Local Government Engineering Department (LGED) as the main implementing agencies. RHD will implement the widening and traffic safety improvements of the western corridor from Jashore – Jhenaidah – Bonpara – Hatikumrul corridor and Bhomra – Satkhira – Navaron corridor totaling to about 260 km of regional roads. LGED will implement construction, rehabilitation and improvements of priority rural roads and market infrastructures in 10 districts in the Western Region. The exact locations of these roads and market infrastructures are not known at this point. The program is envisaged to be implemented in phases and could run from 10-12 years of implementation. The Program would be implemented in three phases. The first phase of this project will follow the same component structure as the overall program and will finance the upgrading of national highways from Jashore to Jhenaidah (48 km) and associated feeder roads and rural market infrastructure along this part of the corridor, and road transport sector modernization interventions.

The project is conceived as an economic corridor, thus it is expected to have a strong focus on the resulting economic benefits for the communities living around the core infrastructure. This will be accomplished by using a network approach to corridor development—developing an appropriate mix of investments in trunk infrastructure and strategic auxiliary infrastructure in the districts that form part of the overall corridor. To this end, the Government has made policy decisions to develop some of the growth centers around the country with concept of providing several services including markets, health and education facilities and others but keeping the natural beauty and bio-diversity to the indigenous and genuine rural essence. Such an approach is consistent with international experience on the role of "central places" as nuclei for rural transformation and mitigate migration from rural to urban cities LGED is piloting this new strategic thrust in some districts, though none of them are in the proposed WeCARE project area.

WeCARE Program Description

The Project Development Objectives (PDOs) of the project is to provide efficient, safe, and resilient connectivity along a section of a regional transport corridor in Western Bangladesh and reduce post-harvest losses in the hinterland of section.

The Program will include Ten (10) Districts namely Jashore, Jhenaidah, Magura, Satkhira, Kushtia, Pabna, Natore, Chuadanga, Meherpur and Sirajganj. However, Phase I funded by WB will include the ROW only in the Jashore-Jhenaidah segments and its connecting rural roads and GCs.

The WeCARE Program will have the following five (5) components:

Component 1: Upgrading National Highway Corridor and enhancing digital connectivity: This component will be implemented by RHD and will finance associated works, services, goods for the following sub-components:

a) Upgrading of the Jashore-Jhenaidah national highway (48km);
b) Installation of OFC and deployment of Intelligent Transportation Systems (ITS); and
c) Implementation of a Safe Corridor Demonstration Program (SCDP) along the Jashore-Jhenaidah

national highway

Component 2: Upgrading secondary and tertiary roads and complementary logistics infrastructure and services: *This component will be implemented by LGED and will finance associated works, services and goods in the four (4) Program Districts of Jashore, Jhenaidah, Magura, and Chuadanga for the following sub-components:*

a) Development and upgrading complementary logistics infrastructure and services including rural markets in selected growth centers; and
b) Upgrading of secondary and tertiary road network serving selected markets.

Component 3: Project Implementation Support and Sustainability: This component will be implemented by both RHD and LGED and will finance associated services and goods for following sub-components:

a) Training and capacity building;
b) Strategic Environmental and Social Assessment (SESA);
c) Establishing a Fiduciary Advisory Panel;
d) Establishing a Transport Sector Integration and Coordination Platform (TSICP) and operationalizing the Road Maintenance Fund Board Act; and
e) Preparatory Activities for Subsequent Program Phases.

Component 4: COVID-19 Relief and Recovery: This component will be implemented by both RHD and LGED to help GoB to provide just-in-time livelihood support to poor people in rural areas and stimulate local economy to help fight against COVID-19 emergency. This component will finance associated services and goods for following sub-components:

a) *Provision of jobs through labor intensive civil works;*
b) Development of an Emergency Response Plan for COVID-19; and
c) *Provision of necessary physical upgrades to transport agencies.*

Component 5 - Contingent Emergency Response: This component will improve the GoB's ability to respond effectively in the event of an emergency in line with WB procedures on disaster prevention and preparedness. Following an eligible crisis or emergency, the Recipient may request the Bank to re-allocate project funds to support emergency response and reconstruction. This component would draw from other project components to cover emergency response.

Sub-project Types (Typology)-LGED Component

The Typology of LGED subproject includes:

- Improvement and Modernizing of potential Growth centers, Markets and Ghats in Program districts (Jashore, Jhenaidah, Satkhira, Magura, Chuadanga, Kushtia, Pabna, Meherpur, Natore and Sirajganj)
- Improvement, widening and capacity enhancement of LGED Feeder Roads as CORE ROAD;
- Improvement of village/farm/hinterland roads aligned to CORE ROADs;
- Integrate and connect the Railway stations to the road network with the best possible connectivity;
- Improvement of new and possible linkage with proposed Economic Zone;

- Integrate Road with Riverine/Water route, Multimodal Transport;
- Improvement or Construction of road connected with markets with hinterlands and also improvement of collection hub or collection center at or near to alignments proposed for improvement. These hub or collection center will reduce post-harvesting loss and will ensure an effective value chain;
- Laying of "Fiber Optic Cable" that will be engraved along the proposed alignment;
- Landscaping at Market Places, Bridge approaches, road dividers and other spaces;
- Construction of Road Safety infrastructures;
- Solar powered automated railway crossing;
- Labor intensive minor maintenance works;
- Development of an Emergency Response Plan for COVID-19; and
- Provision of necessary physical upgrades to transport agencies.

The ESIA for RHD component will be prepared separately, whereas this Environmental and Social Management Framework (ESMF) will cover the LGED component. The number, type and locations of the LGED interventions under components 2 and 3 will be decided over during the project implementation stage. Beneficiary groups and sites for any small infrastructures will be known in the implementation level and therefore, site specific environmental and social issues and impacts could not be identified and specified for mitigation at the preparation stage. LGED will screen sites for project interventions and identify potential environmental and social risks and impacts and propose mitigation measures as well as the target group beneficiaries at the implementation level for preparation and implementation of any social action plans. Hence, there is a need for procedural guidance for environmental and social preparation and management. LGED has therefore prepared ESMF as a constituent part for guidance in the implementation stage.

Overview of the ESMF

This ESMF is needed to screen the environmental and social risks and impacts of the LGED-led activities (component 2 and 3) and provide guidance in the preparation of specific assessments and plans for the subprojects during implementation, including implementation of any plans. The ESMF is intended to be used as a practical tool during program formulation, design, implementation, and monitoring in WeCARE. This document will be followed during project preparation and implementation for ensuring environmental and social integration in planning, implementation, and monitoring of project supported activities.

LGED has implemented a number of projects on rural roads and bridges, rural waterways and growth center markets, including the Second Rural Transport Improvement Project (RTIP2) and the Program for Results on Rural Roads and Bridges financed by the World Bank. As an active client of the Bank, LGED has developed a number of environmental and social instruments to manage the E & S risks and impacts of the projects in accordance with World Bank ESF requirements. An Environmental Management Framework (EMF) and Social Impact Management Framework (SIMF) were developed for RTIP1 and RTIP2, which were updated during the processing of an Additional Financing for RTIP2. These frameworks, however, were developed following the World Bank's old safeguard policies, which will no longer apply to the WeCARE Program. The new Environmental and Social Framework (ESF) of the World Bank will be applied to WeCARE. In this regard, the EMF and SIMF for the existing Bank-financed project with LGED

has been updated to become the ESMF and meet the requirements of the ESF. In addition, the World Bank has conducted a capacity assessment of RHD and LGED under this project, which also needs to be reflected in the ESMF in the relevant sections.

Applicable Environmental and Social Standards and GoB Regulations

The legislations relevant for environmental assessment for WeCARE-LGED components are the Environmental Conservation Act 1995 (ECA'95) and the Environmental Conservation Rules 1997 (ECR'97). Article-12 of Environment Conservation Act '1995, the key act governing environmental protection in Bangladesh, states that 'No industrial unit or project shall be established or undertaken without obtaining, in the manner prescribed by rules, an Environmental Clearance Certificate from the Director General (of Department of Environment, DoE)' and one of the key procedures to obtain the Environmental Clearance Certificate is to undertake an effective and expert environmental assessment. As part of a government entity, LGED is obliged to abide by all these acts and rules, in addition of other GOB acts, rules or guidelines.

Overall, the proposed project is targeting to intervene a wide range of environmental elements covering a vast area of rural environment, with rehabilitation/construction of higher quantity of small scale infrastructures, improvement/modernizing/construction of potential Growth centers, Markets and Boat Ghats, laying of "Fiber Optic Cable" and construction/ rehabilitation of rural roads **may fall under the schedule 'Orange-B and very few in Red Category' based on ECR '97 of DoE.**

All ESSs will be applicable in the WeCARE program, except the ESS 9: Financial Intermediaries, and WB's legal policies for Projects on International Waterways (OP 7.50); and Project Disputed Areas (OP 7.60). As of the preparation of the ESMF indigenous people were not found in the project area. However, if any SEC identified during project implementation, ESS7 will be applied to the sub-projects and separate SECDP will be prepared. If free and prior informed consent is required, it will also be obtained for the sub-projects.

Environmental and Social Risk Classification (ESRC) of the WeCARE program has been classified as 'High Risk'. However, none of the LGED sub-projects are likely to be fallen at the 'High Risk', hence LGED component is classified as 'Substantial Risk'.

Analysis of Gaps between WB ESSs and GoB Regulations

A gap analysis between WB's ESSs and GoB Regulations was conducted as part of the E&S capacity assessment of RHD and LGED. The results of the gap analysis indicated that the ES risk assessment and management system for development projects in Bangladesh is open-ended but just like other country's EIA systems, does not cover all the World Bank ESF's ES Standards. The ECA/ECR does not even define the scope of the EIA study (or the IEE), leaving it to the EIA prepare to determine the scope through initial assessment/screening. The coverage of the EIA study therefore would depend on the expertise of the EIA team or the DOE reviewers. There is no assurance that each ES Standard (1-8 and 10) are considered in the EIA study and the formulation of the ESMP. Although the EIA is heavy towards the environmental aspects, more and more social issues are incorporated in the assessment. Moreover, the practice under normal circumstances does not include labor management issues. Another critical gap pertains to lack of provisions for requiring the preparation of project-specific ES management plans. The eminent domain land acquisition system for example does not require the preparation of RAP. The projects are also not

required to formulate their own Labor Management Procedures/Plans. Given the gaps, this ESMF will follow the most stringent standards and requirement.

Environmental and Social Baseline Condition

The general topography of the project area comprises floodplains in the majority of the road and terraces, located on the flood plain of the Ganges River. Topographically the cluster of the project location is almost flat, with many depressions, natural khals, bounded by the rivers. The project area has several rivers namely Bhairab River, Chitra River, Begobati River. There are also significant numbers of beels and canals in and around the project locations. Besides, there are numerous numbers of ponds and ditches available in the project area. The recharge of the aquifer in the project area is predominantly from deep percolation of rain and flood water. The actual recharge is apparently much less than its' potential, leading to substantial lowering of the seasonal water table. The region is currently risk free of floods unless there is a breach of the flood protection bank. The project area does not fall under the risk zone of cyclone. However, due to its geographic location, flood occurs in the project area but not frequently. There are several numbers of small and big brick kiln, one Rice mill and one sugar mill some frozen factory factories/industries located in the project. Moreover, there are significant numbers of brick kilns situated along the project corridor. Therefore, air pollution is localized and comparatively moderate at the project corridor.

The project road alignment falls in the Teesta Floodplain, Major Rivers and Ganges Floodplain bio-ecological zone. The project area consists of open agricultural lands, homesteads, and roadside vegetation. The open agriculture land dominates the area providing widespread habitat types for various species of flora and fauna under flooded and non-flooded conditions. The vegetation covers of agricultural lands are different crop species, weeds and other herbaceous plants species. The faunal species in the agriculture land and roadside bush ecosystems include common birds, amphibians, fish, snakes rodents and a few mammals. The homestead ecosystem provides mainly tree covered areas within rural Bangladesh including the project site. The homesteads are covered by fruit, timber, fuel wood, medicinal plants and various multipurpose tree species. The wildlife species in homestead ecosystem include the birds, amphibians, reptiles, rodents and mammals like mongoose, jackal, cats, monkey, etc. There may be some sensitive areas (such as school, mosque, madrasah, monuments, factory, orphanage are present in the sub-project areas, which will be explored during detailed baseline survey.

Marjat Baor is an ecologically critical area situated in the Kaliganj Upazila of Jhenaidah and Chaugacha Upazilla of Jessore, which is considered the only environmentally sensitive location within the project influenced area of the LGED component. Marjot Baor, however, is more than 5-km away from the Jashore-Jhenaidah Road that will be upgraded by RHD under the project. Marjat Baor (area 325 ha) is an oxbox lake, partially or no connection with the main river Bahirab is important habitat for many fishes and waterfowl. It supports livelihoods of many fishermen. However, if any of the LGED sub-projects adversely impact on Marjat Baor, those projects will be ineligible under the project.

HHs survey done by RHD ESIA Team in October 2019 showed that 83.33 percent of the respondents indicated that they were Muslims, while 16.67 percent reported being Hindus. The average age of each HH is approximately 31.17 years, with maximum age being 95 years. In terms of the highest level of education obtained 11 percent of women has completed primary school. Both men and women have a high dropout rate and the dropout rate is fairly comparable (53.89 percent for female vs 55.67 percent for male). The average income of the surveyed HH is BDT 19,223, and the values for 25th and 75th

percentile is BDT 10,050 and 21,500, respectively. However, there are 34 HH whose average monthly income is less than or equal to BDT5000 and thus they fall below the poverty line. Disaggregated the income figures in terms of men and women indicate that women on average earn marginally less that women (BDT 19510). While, the mean expenditure for an average HH is BDT 16,347.

Potential Key Environmental and Social Impacts of the Sub-projects

The overall impact assessment of the proposed project activities of WeCARE sub-projects to be implemented reveals that most of the likely adverse impacts could be minimized or eliminated by adopting standard mitigation measures. There is also scope to enhance some of the beneficial impacts to be generated from the proposed project. The potential impacts of the LGED sub-projects on the key environmental and social parameters that have been identified as part of the ESMF are listed and analyzed in according to the ES risk categories based on the significance of each impacts following the standard criteria. These impacts are discussed and guidelines for mitigation included for the ESMF of the WeCARE LGED sub-projects.

Environmental and Social Management Procedures

WeCARE LGED's sub-projects will use a structured approach to environmental and social management to allow the project development process following the newly developed 10 ESSs, follow the mitigation hierarchy of avoidance, minimization, mitigation and compensation/offset for negative impacts and enhancement of positive impacts where practically feasible. Due to the nature of some of the proposed sub-project activities under WeCARE program and potential environmental and social impacts, the project falls under 'Orange B or RED' category according to ECR, 1997 and also falls under "Substantial Risk Project' as per the World Bank ESS1, which requires proper IEE, ESIA and implementation of environmental and social management plan.

Environmental and Social screening is essential to screen the E&S risks and impacts of the project to determine the level of environmental and social impact assessment and management planning that need to be carried out for the WeCARE-LGED sub-projects. Screening identifies the consequence of the proposed project in broader sense based on similar project experiences, stakeholder's perceptions and expert judgment, without having very much detailed investigation. Critical issues are also identified through the screening which needs detailed investigation. Based on the extent of environmental and social impacts obtained from the screening, the decision for further environment and social impact assessment will be taken.

The ESIA will utilize a well-planned and all-inclusive communication and consultation strategy and include a baseline survey covering the prevailing status of income, employment, education, age, skills and other socio-economic aspects along with cultural and community aspects in the areas. A separate Stakeholders Engagement Plan (SEP) has been prepared for LGED sub-projects, which will be followed during preparation and implementation. The assessment will feed into the individual Resettlement Plans prepared for each site and will be incorporated, along with consultation feedback from those identified in the PAP census and all other relevant stakeholders, in the development of mitigation measures, especially livelihood strategies. LGED will undertake a survey for identification of the persons and their families likely to be affected by the project. LGED on completion of the assessment will disseminate the results among the affected community. Based on the assessment, project will prepare an action plan to mitigate or minimize the adverse impacts as identified during the survey.

The draft mitigation plan in form of resettlement action plan (RAP) will be again disseminated among the affected individuals/ community. The feedback received from the affected groups will be incorporated to the extent possible before finalization of the RAP. When ESIA identifies small ethnic communities that meets the criteria of ESS7, measures will be taken to avoid any adverse social effected to these communities and a small ethnic community development plan (SECDP) will be prepared following ESS7 requirements. If a free, prior and informed consent is required, the sub-projects will meet that requirement. Procedure of RAP has been discussed in the RPF and those for preparation of SECDP in the SECDF presented in stand-alone volumes. However, the WeCARE Phase I area has no such small ethnic community those required attention to develop SECDP/SECDF.

Various environmental and social management plans (ESMP) will be prepared for the WeCARE. However, according to the project planning, the activities those need ESIA will be implemented at different periods and hence, multiple ESIAs would be required clustering the similar activities prior to the actual intervention start.

The ECoPs consist of environmental management guidelines and practices to be followed by the contractors/ implementation organizations for sustainable management of all environmental issues. The contractor will be required to follow them as part of contract and also use them to prepare site-specific management plans. Possible environmental impacts during pre-construction phase from construction, rehabilitation and maintenance activities should be identified before starting of the work to develop site-specific management plans. Detail activities need to be identified first and thereafter set of actions or interventions are to be demarcated and any possible effect due to an action is to be determined. Best practice mitigation or enhancement measures should be explored accordingly and deployed in the field.

The monitoring plan is the key element of ESMP and the main purpose of this monitoring program is to ensure that the various tasks detailed in the ESMP particularly the mitigation measures are implemented in an effective manner, and also to evaluate program impacts on the key environment parameters. LGED will engage an independent consulting firm to conduct external and independent monitoring of the ESMP implementation. The main purpose of the external monitoring will be to ensure that all the key entities including EU, DSM, PMC and contractors are effectively and adequately fulfilling their designated role for ESMP implementation, and that all the ESMP requirements are being implemented in a timely and effective manner. For evaluating the performance of the environmental management and monitoring plan, performance indicators are identified to for efficient and timely implementation of measures/actions proposed in ESMP. The indicators are defined both for implementation phase and for post project period. DSM will be responsible for compiling the information on these indicators and report to LGED.

Total US$ 3.5 million (1.9%) is estimated for implementation of ESMP which should be embedded in the proposed total project budget from IDA. The Development Project Proposal (DPP)/Technical Assistance Project Proposal (TAPP) of LGED/MoLGRDC for the proposed program should reflect the ESMP activities with budget for successful environmental management of the program.

Institutional Arrangement and Capacity Building Plan

The process of ESIA as well as the monitoring of the ESMP involves substantial linkage and coordination between various line agencies. The LGED (Environmental Management Unit) will play a vital role in

coordinating and managing this process. This organizational integration and cooperation is very important for environmental and social assessment, reporting, management and the monitoring process for the large number of upcoming projects under the LGED. The LGED will also liaise with the local NGOs, for grassroots level work with project affected communities. To ensure the environmental sustainability, the LGED has already established an Environmental Management Unit (EMU), headed by a Superintending Engineer, two Executive Engineers are responsible for Environment and Social unit of the EMU in order to help the focal person of EMU to act separately in environmental and social sections. Under each section two Assistant Engineers are positioned for helping the Executive Engineers. They are the officially responsible for ensuring environmental and social consideration in all of the project activities of the LGED. All of the engineers are provided with adequate training on different environmental and social issues for capacity building. In addition to that, qualified consultant (environment and social specialist) can be recruited by the LGED in a temporary basis to provide technical assistance, training and capacity building to the environmental and social sections.

The WeCARE implementation will be led by the Project Implementation Unit (PIU) that will be established within LGED. The PIU will be headed by the assigned Project Director (PD). Further details of the institutional arrangement for the overall WeCARE management should be available in the ESMP of specific IEE/ESIA report for WeCARE, Phase I under the Institutional Arrangement volume. As LGED has already set-up an EMU (Environmental Management Unit) with qualified staff in its regular organogram, this EMU under the leadership of a LGED officer will assist the PIU (i.e. PDO) on issues related to environmental and social management by forming a formal Social, Environment, and Communication Committee (SECC). EMU/SECC will oversee the Design Supervision Management (DSM)/Project Management Consultants and other contractors (to be engaged in project activities implementation) and will compile quarterly monitoring reports on ESMP compliance, to be sent to the Project Director and also shared with the World Bank, throughout the project implementation period. The EMU/SECC will also provide trainings to the LGED field personnel responsible for monitoring of environmental compliance during both implementation and subsequent post project period of the program. Thus, smooth transition to LGED will happen to ensure environmental compliance during the post project period. Other than LGED, various organizations like Department of Environment (DoE); Forest Department(FD); LGED; Bangladesh Water Development Board (BWDB); Roads & Highways Department (RHD); Bangladesh Agricultural Extension (BAE); Bangladesh Road Transportation Authority (BRTA); Bangladesh Inland Water Transport Authority (BIWTA); Local Administration (District/Upazila/Union); Community based organizations; and various Non-government organizations will be involved as stakeholders during implementation stage. A separate Capacity Building Plan (CBP) for the LGED WeCARE has been prepared under the Capacity Assessment Bangladesh/WB which will the main guiding document to build capacity of LGED for implementing the ESMF.

Stakeholder Engagement

During the preparation of the present ESMF, initial consultations with the key stakeholders have been carried out at 5 sites covering 2 (two) districts to obtain their views on program interventions. However, field surveys, consultations with different stakeholders, focus group discussions (FGDs) that were carried out to develop this ESMF of WeCARE LGED sub-projects, are not enough considering the project area and dimension of the stakeholders. Extensive field visits are required at the ESIA stage to overcome this shortcoming and conduct extensive discussions with the relevant stakeholders throughout the program sites to discuss components, sub-components, activities, potential positive and negative impacts and

measures taken to mitigate those impacts. It is also required to record the views of each of the respondents of the consultations, irrespective of gender, profession, religion, and age groups. The ToR of the ESIA should be described in the public meetings during the initial stage of the ESIA in all the sites of the proposed project. LGED has also organized a disclosure workshop to share the findings of the ESMF among the local stakeholders. Findings of the ESIA will also be presented in local language going back to the same stakeholders while the draft is ready to submit for DoE clearance. Consultation meetings are necessary to identify issues and problems to enable LGED to include corrective measures and to identify lessons and opportunities to enhance program implementation mechanism.

A separate Stakeholders Engagement Plan (SEP) has been prepared for WeCARE which will be the main guiding document for the LGED sub-projects. Similarly, LGED will address gender issues through approaches that are participatory and responsive to the needs of the poor, particularly when it involves management of fisheries resources. However, a separate standalone Gender Based Violence (GBV) report will be prepared and disclose by LGED, to address the ESS requirement.

Grievance Redress Mechanism

A separate GRM has been proposed under the RPF, which will guide the project GRM during implementation. The WeCARE program will establish a grievance redress mechanism (GRM) for addressing grievances and complaints received from the program -affected persons due to environmental issues. Grievance Redress Mechanism (GRM) is a valuable tool which will allows affected people to voice concerns regarding environmental and social impacts for WeCARE's activities. LGED would ensure that grievance redress procedures are in place and would monitor those procedures to ensure that grievances are handled properly. The LGED office will establish a procedure to answer sub- program -related queries and address complaints, disputes, and grievances about any aspect of the sub- program, including disagreements regarding the assessment and mitigation of environmental and social impacts.

Information Disclosure

The mechanism of information dissemination should be simple and be accessible to all. Two of the important means that have been followed until now include briefing material and organization of community consultation sessions. The briefing material (all to be prepared in local language) can be in the form of (a) brochures (including project information, details of entitlements including compensation and assistance to be given to the PAPs; grievance mechanism) that can be kept in the offices of local self-government (union parishad office) and project office; (b) posters to be displayed at prominent locations and (c) leaflets that can be distributed in the project areas. Consultation meetings should also be organized at regular intervals by the project to acquaint the communities, target group beneficiaries and affected persons on various aspects. The draft ESMF of WeCARE will be disclosed to the local and national level stakeholders through different methods as described in the 'Access to the information system'. Summary of the IEE, ESIA and ESMF report along with ESMP will be translated into Bengali language and disseminated locally. The full report (in English) and the summary (in Bengali) will also be uploaded in the website of LGED and World Bank. Hard copy of the IEE, ESIA and ESMF will also be available at LGED District and Upazila offices of the program area.

Chapter 1: Introduction

1.1 Introduction

The Government of Bangladesh (GoB) through the Ministry of Finance (MoF) has requested the World Bank (WB) to support the preparation and implementation of the Western Economic Corridor and Regional Enhancement Program (WeCARE Program) with the Roads and Highways Department (RHD) and the Local Government Engineering Department (LGED) as the main implementing agencies. RHD will implement the widening and traffic safety improvements of the western corridor from Jashore – Jhenaidah – Bonpara – Hatikumrul corridor and Bhomra – Satkhira – Navaron corridor totaling to about 260 km of regional roads. LGED will implement construction, rehabilitation and improvements of priority rural roads and market infrastructures in 10 districts in the Western Region. The exact locations of these roads and market infrastructures are not known at this point. The program is envisaged to be implemented in phases and could run from 10-12 years of implementation. The Program would be implemented in three phases. The first phase of this project will follow the same component structure as the overall program and will finance the upgrading of national highways from Jashore to Jhenaidah (48 km) and associated feeder roads and rural market infrastructure along this part of the corridor, and road transport sector modernization interventions. In parallel with phase 1, AIIB would finance the upgrading of national highways from Bonpara to Hatikumrul (52km).

The project is conceived as an economic corridor, thus it is expected to have a strong focus on the resulting economic benefits for the communities living around the core infrastructure. This will be accomplished by using a network approach to corridor development—developing an appropriate mix of investments in trunk infrastructure and strategic auxiliary infrastructure in the districts that form part of the overall corridor. To this end, the Government has made policy decisions to develop some of the growth centers around the country with concept of providing several services including markets, health and education facilities and others but keeping the natural beauty and bio-diversity to the indigenous and genuine rural essence. Such an approach is consistent with international experience on the role of "central places" as nuclei for rural transformation and mitigate migration from rural to urban cities LGED is piloting this new strategic thrust in some districts, though none of them are in the proposed WeCARE project area.

The project design will build on the lessons from the ongoing pilots and reflect the policy direction of the Government. LGED has a detailed multi-criteria approach for selecting and prioritizing roads for improvement. LGED and the Bank team agreed that there is scope to build on the existing prioritization approach and extend it to include auxiliary infrastructure (markets and other social infrastructure) that the project will support. The guiding principles of any improvements to the prioritization approach comprise of (a) taking a network based approach by integrating the assessment of connectivity needs of main corridor to markets to hinterland (road investments, as well as, other auxiliary investments); (b) accounting for the function of the market (along with lease values as presently done), (c) integrating critical value chains in the prioritization, and (d) placing a special consideration for the needs of women. These analyses will be conducted jointly by LGED and WB. Schematic diagram of the LGED new model shows in Figure 1.1, reflects the improvement of transportation and reducing the marketing time:

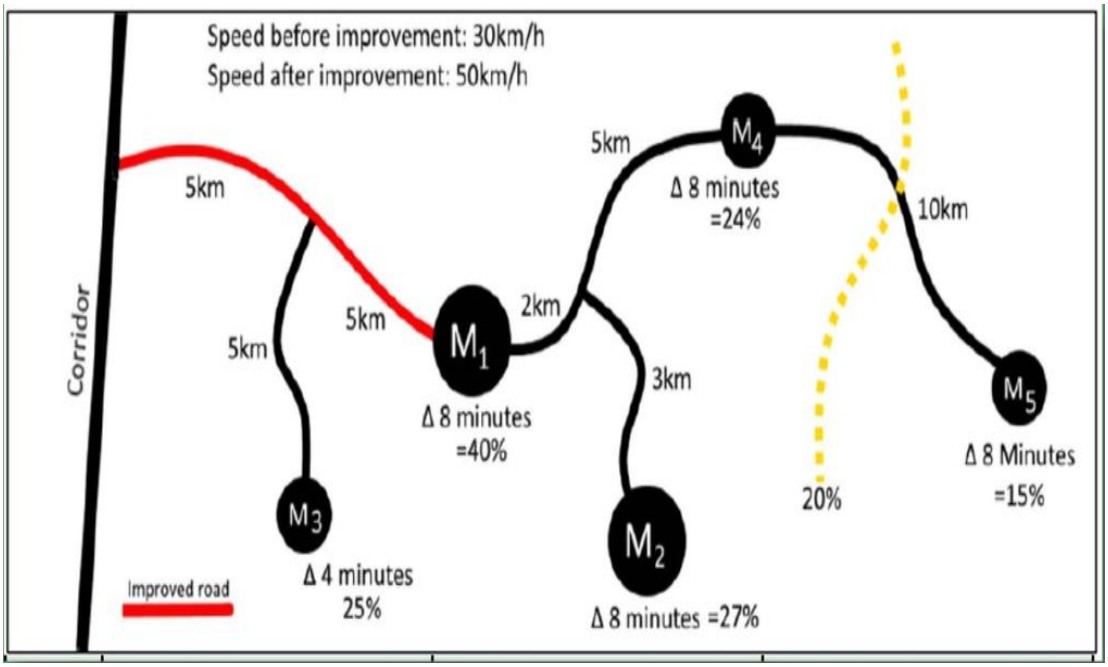


Figure 1.1: Schematic diagram of LGED strategy to improve rural road infrastructure to enhance connectivity between growth centers and markets

This Environmental and Social Management Framework (ESMF) is needed to screen the environmental and social risks and impacts of the LGED-led activities and provide guidance in the preparation of specific assessments and plans for the subprojects during implementation, including implementation of any plans.

1.2 Purpose of the ESMF

The ESMF is intended to be used as a practical tool during program formulation, design, implementation, and monitoring in WeCARE LGED Components 2 and 3. Safeguards instruments for RHD's component 1 will be prepared separately. This document will be followed during project preparation and implementation for ensuring environmental and social integration in planning, implementation, and monitoring of project supported activities. For ensuring good environmental management in the proposed WeCARE program, the ESMF will provide guidance on pre-investment works/studies (such as environmental and social screening, environmental and social assessment, environmental and social management plans, etc.), provide set of steps, process, procedure, and mechanism for ensuring adequate level of environmental and social consideration and integration in each investment in the project-cycle; and describes the principles, objectives and approach to be followed to avoid or minimize or mitigate impacts. While this ESMF document has been prepared to identify the potentially negative impacts of the WeCARE, the specific objectives are to:

- integrate the environmental and social concerns into the identification, design and implementation of all project interventions in order to ensure that those are environmentally sustainable and socially feasible;
- ensure all relevant environmental and social issues are mainstreamed into the design and implementation of the projects/sub-projects and also in the subsequent phases of the WeCARE;

- consider in an integrated manner the potential environmental and social risks, benefits and impacts of the program and identify measures to avoid, minimize and manage risks and impacts while enhancing benefits;
- ensure compliance with national laws and regulations, and World Bank requirements. The ESMF presents potential impacts of the WeCARE, mitigation, enhancement, contingency and compensation measures, environmental and social management and monitoring plan, and institutional framework including inter-agency cooperation for implementing ESMP. The ESMF will facilitate compliance with the Government of Bangladesh's policies, acts and rules as well as with the World Bank's environmental and social standards (ESSs) of the newly adopted Environmental and Social Framework (ESF), and
- guide preparing and conducting the detailed ESA/IEE/ESIAs/ESMPs of the later stages of the WeCARE as appropriate to the project components/sub-components.

1.3 Sectoral Background

Bangladesh has made great strides in developing an extensive transport system, particularly road transport which enjoys a modal share of 70% for passenger traffic and 60% for freight. The total road network size of the country is roughly 375,000 km (road density of roughly 250 km per 100 km^2), reflecting the tremendous progress in improving connectivity, particularly at the sub-national level. The rural road network makes up 94 percent of the network and Bangladesh has one of the highest scores on the Rural Access Index.

The primary road network of Bangladesh – which is under the responsibility of the Bangladesh Roads and Highways Department (RHD), Ministry of Road Transport and Bridges - extends more than 21,000 km, of which 7,000 km are national and regional highways, and 13,100 km are Zilla (district) roads. Improvement of regional road connectivity to boost trade and commerce is a key priority for RHD, who is pursuing a policy of corridor-based road development with a view to accommodate regional as well as international traffic. RHD is participating in different regional connectivity initiatives, including the Asian Highway Network, South Asia Sub Regional Economic Cooperation (SASEC) Road Corridors, Bangladesh-China-India-Myanmar Economic Corridor (BCIM-EC), Bay of Bengal Initiatives for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) Road Corridor, SAARC Highway Corridor, and the BBIN MVA dialogue.

Bangladesh's rural road network - which is under the responsibility of the Bangladesh Local Government Engineering Department (LGED), Ministry of Local Government, Rural Development & Cooperatives - consists of 37,800 km of Upazila Roads, 44,750 km of Union Roads, and 215,750 km of Village Roads. Bangladesh's rural road network is essential for improving the livelihoods of about 66 percent of the country's people. Rural access connectivity to the country's main transport corridors is a key priority for the government. LGED aims to double-lane high volume Upazila Roads and Union Roads that are predominantly used by commercial vehicles and connect to the main transport arteries. It will also invest in other rural infrastructure, such as rural markets to promote inclusive growth by expanding economic opportunities to the poorer rural communities.

Digital connectivity remains a challenge in Bangladesh, especially outside the main cities. Bangladesh ranks 78 on the Global Connectivity Index for 2018. While Mobile broadband subscription rate continues to grow, it has also become less affordable. Most of the optical fiber system is overhead and suffers from frequent cuts, requiring new OFC to increase coverage and reliability. To achieve the government's 'Digital

Bangladesh by 2021' vision to mainstream ICTs as a tool to eradicate poverty, establish good governance, ensure social equity, significant investments in broadband infrastructure will be required.

The WeCARE Program will be implemented in the Southwest Region (SWR) of Bangladesh. The SWR is isolated from the rest of Bangladesh despite its importance for regional and international trade. For trade with other countries, in particular India, Nepal and Bhutan, three of the six most important trade gateways in Bangladesh—Benapole and Bhomra land ports, and Mongla seaport—are located in the SWR. The Benapole-Petrapole border post is the busiest land port between Bangladesh and mainland India, and accounts for almost 90 percent of Bangladesh's overland exports, and over half of India's overland exports. Due to the rapid growth in bilateral trade between Bangladesh and India, and increasing congestion at Benapole-Petrapole, Bhomra Land Port has experienced a two-thirds increase in trade volume over the past two years.

1.4 Rationale of the ESMF

LGED has implemented a number of projects on rural roads and bridges, rural waterways and growth center markets, including the Second Rural Transport Improvement Project (RTIP2) and the Program for Results on Rural Roads and Bridges financed by the World Bank. As an active client of the Bank, LGED has developed a number of environmental and social instruments to manage the E & S risks and impacts of the projects in accordance with World Bank ESF requirements. An Environmental Management Framework (EMF) and Social Impact Management Framework (SIMF) were developed for RTIP1 and RTIP2, which were updated during the processing of an Additional Financing for RTIP2. These frameworks, however, were developed following the World Bank's old safeguard policies, which will no longer apply to the WeCARE Program. The new Environmental and Social Framework (ESF) of the World Bank will be applied to WeCARE. In this regard, the EMF and SIMF for the existing Bank-financed project with LGED need to be updated to meet the requirements of the ESF. In addition, the World Bank has conducted a capacity assessment of RHD and LGED under this project, which also needs to be reflected in the ESMF in the relevant sections.

The number, type and locations of the component interventions will be decided over the project implementation stage. Beneficiary groups and sites for any small infrastructures will be known in the implementation level and therefore, social issues and impacts could not be identified and specified for mitigation at the preparation stage. LGED will screen sites for project interventions and identify the target group beneficiaries at the implementation level for preparation and implementation of any social action plans. Hence, there is a need for procedural guidance for social preparation and management. LGED has therefore prepared Environmental and Social Management Framework (ESMF) as a constituent part for guidance in the implementation stage.

The rationale for developing the framework is based on the consideration that all subprojects under the LGED Components will only be identified and prepared during the implementation of WeCARE. Therefore, detailed site investigations will be carried out as part of identifying specific project activities and related designs at the selected locations to ascertain the precise nature of the environmental and social impacts. The ESMF will provide the necessary background for environmental and social considerations, a checklist of potential issues of the project activities to be considered and built into the design of the project so that socially sustainable implementation can take place, including environmental and social screening of subprojects and guidance on the preparation of specific assessments and plans.

This ESMF will also serve as the guideline for the staff designated by the implementing agencies - the LGED to oversee and monitor the social safeguards compliance of the project components coming under their implementation responsibility. The ESMF will be a living document and will be reviewed and updated periodically as needed.

1.5 Approach and Methodology of the ESMF

The ESMF has been prepared following the standard methodology consisting of the steps listed below:

- Review of the program details and meeting/discussions with the LGED team
- Review of the policy and regulatory requirements
- Conduct reconnaissance field visit by group of experts and LGED team and initial scoping and screening to determine the key environmental and social parameters and aspects that are likely to be impacted by the program activities
- Collect and analyze of baseline environmental and social data with the help of secondary literature review and field data collection
- Consult with the stakeholders including beneficiary/affected communities and developing the consultation process
- Assess the potential and likely impacts of the program activities
- Prepare an outline environmental and social management issues according the requirements of the newly adopted 10 ESSs of the ESF
- Compile of the individual thematic reports into ESMF

The methodology for the preparation of the ESMF is presented in Figure 1.2.

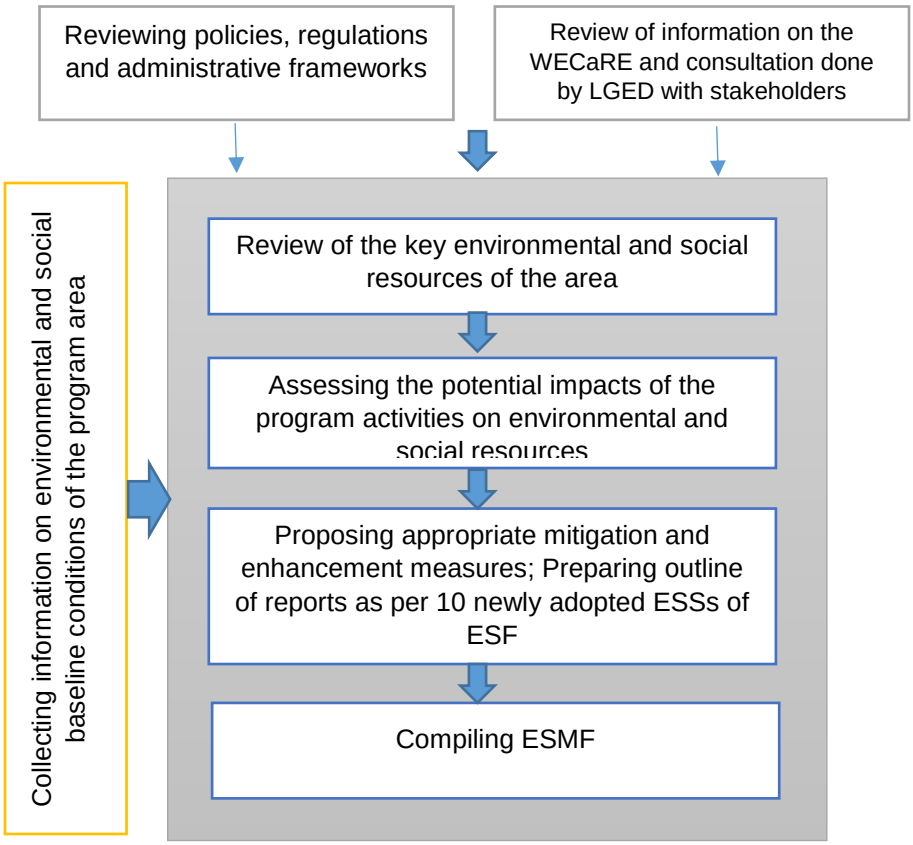


Figure 1.2: ESMF Preparation Approach

1.6 Structures of this ESMF

Chapter 2 presents a simplified description of the WeCARE program, its various components and other salient information relevant for environmental and social assessment. Chapter 3 reviews the prevailing WB and national regulatory requirements relevant to environmental and social assessment. Description of the baseline environmental and social conditions is presented in Chapter 4. Environmental and Social management steps to be followed during the program and also Screening, assessment and prediction of potentially negative environmental and social impacts have been discussed under Chapter 5, the chapter has also presents the outline of the environmental and social management plan (ESMP) and as well as the appropriate mitigation measures to address these negative impacts. Chapter 6 elaborates the requirements of Stakeholder Engagement, Grievance Mechanism and Disclosure along with describing the consultations that have been carried out with the stakeholders and also the requirements of similar consultations to be carried out while preparing the IEE/EIAs/SIAs/ESMPs. Finally, Chapter 7 describes institutional framework and capacity building plan to implement the ESMF.

1.7 Composition of LGED ESMF Team

The LGED team to prepare the ESMF was led by Mr. Mohammad Shahad Mahabub Chowdhury, Environmental and Social Safeguards Expert, along with a team of 5 members responsible for developing thematic frameworks namely Mr. Fayaz Uddin Ahmed, Labor Management Framework (LMF) Expert; Ms. Marufa Akter, Gender Action Plan (GAP) Expert; Ms. Hasna Maymuna, Resettlement Plan Framework (RPF) Expert; and Mr. Md. Anisuzzaman Bhuiyan, Stakeholders Engagement Plan (SEP). The team collected baseline information and collated the findings of the stakeholder consultations assisted by LGED field officials and PD, WeCARE (LGED part). This ESMF report is consisted with four additional thematic frameworks/plans on LMP, GAP, RPF and SEP to meet requirements of the new WB ESF those prepared by the above individual experts.

Chapter 2: Project Description

2.1 Description of the WeCARE program

The WeCARE program aims to improve the regional connectivity, logistics efficiency in the western region, and road sector management in Bangladesh. It will involve: (i) upgrading of 260km of existing highway corridor[1] (hereafter referred to as the "program corridor"); (ii) upgrading and rehabilitating LGED feeder roads; (iii) complementary logistics infrastructure improvements; and, (iv) road sector modernization and capacity building. The program will also support the laying of Optical Fiber/Utility duct along the program corridor and along selected feeder roads. The Asian Infrastructure Investment Bank (AIIB) will also support the program and finance the upgrading of 160Km (Jhenaidah-Bonpara–Hatikamrul) of the program corridor through a parallel financing arrangement. The Program would be implemented in three phases. The first phase of this project will follow the same component structure as the overall program and will finance the upgrading of national highways from Jashore to Jhenaidah (48 km) and associated feeder roads and rural market infrastructure along this part of the corridor, and road transport sector modernization interventions. In parallel with phase 1, AIIB would finance the upgrading of national highways from Bonpara to Hatikamrul (52km).

The program corridor is conceived as "spine" of the economic corridor with a strong focus on improving the livelihoods of local communities along the corridor, which extends across ten districts[2] from Bhomra in the southwestern corner of Bangladesh to Hatikamrul near the Jamuna (Bangabandhu) Bridge. The ten districts through which the Program corridor passes are home to more than 16 million people[3], and its economic role extends to Dhaka and other cities (as explained previously). Critical trade flows with India are intermediated by the main cities of the western region (e.g. Jashore) which serve as agglomeration and distribution centers in Bangladesh. In addition, the corridor connects a region in Bangladesh that produces several important agricultural and other natural products (jute, vegetables, rice, fruits, mango, banana, litchis, fish and shrimp) for the domestic and international markets.

The local impacts of the corridor would mainly be transmitted through program investments in rural roads, local markets, and agro-logistics that would be connected to the corridor. Considering the poverty and spatial characteristics of the western region, there is a need to accompany major program corridor improvements with local connectivity – to benefit local communities by providing them with nodes for volume consolidation, packaging and trading and for access to the main corridor. As such, the program will aim to integrate local markets and key local value chains along the corridor through investments in feeder roads and logistics infrastructure. These program-supported interventions are expected to stimulate growth in agricultural production by providing access to market opportunities, which is particularly important for smallholder producers who may rely on markets as their sole or main outlet. Impacts include changes in economic agglomeration, trade, and local economic structure that will ultimately yield wider economic benefits (WEBs) — such as the growth of income and consumption, and new jobs. At the same time, the program will aim to ensure that these benefits are equitably distributed

[1] (i) Bhomra-Satkhira-Navaron; (ii) Jessore- Jhenaidah; and (iii) Jhenaidah-Bonpara–Hatikamrul
[2] Satkhira, Jhenaidah, Jashore, Sirajganj, Pabna, Natore, Kushtia, Magura, Chuadanga and Meherpur
[3] 2011 census

and lead to social and economic inclusion. In this context, the program will specifically focus on ensuring that women also benefit from the WEBs generated by the project.

The program corridor is vital for Southwest-Northwest connectivity; overall economic development of the Western Bangladesh; and resiliency of the road network. At the northern end, the Corridor will connect at Hatikumrul to the Dhaka–Northwest international trade corridor, which is the second busiest artery in Bangladesh after the Dhaka–Chittagong road. On the southern end, the corridor will connect to the second largest dry port (in terms of volume) between Bangladesh and India at Bhomra. Thus, the program is expected to yield large economic gains. Further, the program corridor is of great importance from the climate resilience perspective. The Southwest region at present is connected to the rest of Bangladesh through the Lalon Shah bridge (part of the program corridor), and ferry services across the Padma. Due to unreliable ferry service connectivity, most current freight traffic crosses through the Lalon Shah Bridge, which has been identified as one of the busiest and most critical assets in the country's transport network. While the opening of Padma bridge will substantially increase the share of freight crossing over the Padma river, a World Bank road network and freight flow analysis indicates that direct Southwest-Northwest connectivity through the Pakshey/Lalon Shah bridge will remain critical for sustainable freight movement in Bangladesh. The analysis estimates that post Padma Bridge opening, 40 percent of all freight between the Southwest and the rest of Bangladesh will pass through the Pakshey/Lalon Shah Bridge, thereby complementing Padma Bridge and increasing the resilience of the Southwest region by providing two points of connectivity with the rest of the country.

Concurrent with the construction of the trunk corridor infrastructure, the program will support the laying of duct for Optical Fiber Cables (OFC) and possibly other utility cables (e.g. electricity). By applying a "Dig Only Once" policy approach, significant cost savings would accrue from laying duct at the time of road construction. For example, trenching works typically represents up to 80 percent of the cost of OFC installation. The current optical fiber system in Bangladesh suffers from frequent cuts, which affects both urban and rural populations, and new OFC is required to increase coverage and reliability and for the eventual launching of 5G services. Additional benefits and utility of digital connectivity for road sector agencies includes improved highway management, toll gates, weigh bridges, and for other services and applications. At the rural level, OFC duct will be considered for select Upazila roads, and would support the government's "My Village, My Town" initiative, which aims to provide quality public services to rural areas through a2i platform. The program will create synergies between the road and the telecom sectors, with the latter providing the OFC cable and high-speed communications access. The Bank would provide support the RHD during project preparation to establish a revenue generation model for leasing the duct to the private operators.

The program will also support an ambitious road sector modernization and capacity building plan to address key sector issues, transform current practices and introduce innovations across all phases of road sector development in the country. Many of the challenges facing Bangladesh's transport sector are endemic and require sustained engagement. Consequently, the program will also have a long-term engagement on road sector modernization and capacity building. A review of policy, regulatory frameworks and institutional capacity assessment would be carried out during the preparation along with a stocktaking of ongoing initiatives by various MDBs and GoB to arrive at a comprehensive sector and organizational transformation plan to be implemented through a series of TA interventions running across all phases of the proposed program. Key pillars of the road sector modernization plan would include – (i)

Addressing Policy Gaps; (ii) Improving Asset Management and Resilience; (iii) Organizational transformation and Capacity Building

2.2 Involvement of other International Funding Agencies

The Program specifically the RHD component will be supported by parallel-financing from AIIB, who agreed to use World bank ESF to assess and manage risks and impacts of their subprojects. Project Components and Sub-components

The WeCARE Program will have the following five (5) components:

Component 1: Upgrading National Highway Corridor and enhancing digital connectivity: This component will be implemented by RHD and will finance associated works, services, goods for the following sub-components:

Sub-component 1(a): Upgrading of the Jashore-Jhenaidah national highway (48km). This sub-component will finance civil works for widening the existing two-lane single carriageway to four lane dual carriageway with separate service lanes on both sides of the carriageway for slow-moving vehicles and vulnerable road users. It will also comprise associated services, including but not limited to surveys, investigations, data collection, feasibility, design, individual experts, NGOs, supervision and Monitoring and Evaluation (M&E). The civil works contracts will include performance-based maintenance period of 5 years to be financed by the GoB under their revenue budget to ensure the sustainability of investments and better asset management. The sub-component will support the adoption of engineering measures to improve the climate resilience of the road. As the terrain is mostly flat and, much of the corridor runs through flood plains, specific attention will be given to the provision of sufficient cross drainage structures, equalizer pipes and road and bridge height. All contracts will include piloting new technologies and alternative (local and recycled) materials for green and resilient road construction. These pilots will be designed, supervised and monitored by experts involving the Bangladesh Road Research Laboratory (BRRL). In addition, a comprehensive Value Engineering Assessment will be carried out as part of the preparation of contracts to optimize costs and achieve value for money.

Sub-component 1(b): Installation of OFC and deployment of Intelligent Transportation System (ITS) along the Jashore-Jhenaidah national highway. This sub-component will finance the design, supply, installation, and operations & maintenance (O&M) of two 48-core cables in two separate ducts and ITS infrastructure including weigh-in-motion, variable message signs, video and speed surveillance systems, automatic traffic counters and control rooms. The component will also finance associated services, including but not limited to, surveys, investigations, data collection, feasibility, design, individual experts, supervision, M&E and development of revenue generation model for leasing the duct to the private telecom operators.

Sub-Component 1(c) Implementation of a Safe Corridor Demonstration Program (SCDP) along the Jashore-Jhenaidah national highway. This sub-component will aim to implement evidence-based, multi-sectoral road safety interventions using a “safe system approach” and demonstrate its impact on reducing road crash deaths and injuries. This will involve financing countermeasures identified through an iRAP assessment to ensure a minimum 3-star rating for vulnerable road users. The component will finance the segregation of slow-moving vehicles, dividing bi-directional traffic, gateway treatments for schools, hospitals, and market areas; traffic calming at the interfaces of highways with urban and rural access roads; adequate bus bays, truck lay byes; road safety furniture, crash barriers, road marking and signage; and pedestrian crossing facilities and footpaths at market areas/urban locations. The component will also finance enhanced on-field and ICT-based proactive enforcement of traffic rules, post-crash response,

public awareness campaigns and associated works, goods and services, including but not limited to survey, investigations, data collection, feasibility, design, individual experts, supervision, and M&E. This may include procurement of advanced equipment (radar guns, breathalyzers, etc.) and speed enforcement through CCTV cameras linked to control centers, and support for post-crash recovery and rescue including supply, operation and maintenance of advanced life-saving ambulances, tow trucks, cranes and metal-cutting equipment.

Component 2: Upgrading secondary and tertiary roads and complementary logistics infrastructure and services: This component will be implemented by LGED and will finance associated works, services and goods in the four (4) Program Districts of Jashore, Jhenaidah, Magura, and Chuadanga for the following sub-components:

Sub-Component 2(a): Development and upgrading complementary logistics infrastructure and services. This sub-component will finance the development of about 29 selected markets and logistics infrastructure involving storage, grading, sorting, packaging, collecting and selling facilities for selected agriculture value chains and livestock/fishing; and associated amenities like parking, sheds, piped-water supply, toilets, sanitation, waste management, banking, real time display of commodity prices using ICT, etc. The component will also finance associated services, including but not limited to, surveys, investigations, data collection, feasibility, design, individual experts, supervision, market allocation and management, training and capacity building of stakeholders & M&E. An ex-ante prioritization approach, utilizing geospatial modelling, will be used to select growth centers and economic hubs that can be improved to stimulate inclusive local economic growth. An ongoing gender needs assessment has ensured that the logistics infrastructure and services provided significantly surpass principles of universal design or good practice when catering to the specific needs of women (as described in paragraph 55). Specific resilient norms for cyclones/flooding risks will also be incorporated in design and construction.

Sub-Component2(b): Upgrading of secondary and tertiary road network serving selected markets. This sub-component will finance upgrading and development of about 500km of priority Upazila, Union, and village roads serving selected markets; and associated services, including but not limited to, surveys, investigations, data collection, feasibility, design, individual experts, NGOs, supervision and M&E. Specific attention will be given to ensure safety and resilience in design and construction through the use of cost-efficient alternatives, green and local pavement material able to withstand high temperatures; provision of sufficient numbers of culverts/ditches/cross drainage to address the risk of flooding based on site-specific hydrological studies results; safe provisions for the Vulnerable Road Users (VRUs) and non-motorized transport (NMT) will be addressed by including traffic calming measures like lateral shift, chicane, realigned intersection, traffic circle, speed hump, speed table, raised crosswalk, raised intersection, corner extension, and chokers. The roads will be selected to enhance the logistics efficiency for select value chains in the selected markets based on a multi criteria assessment and rigorous fieldwork that takes into account the location and area of influence of rural markets[4], difference in the levels of poverty and economic development, levels of existing road connectivity, and the potential to enhance economic activity of women within the districts (see Annex II, Section D for details). Employment opportunities will be created for women in the upgrading and development of roads (as described in paragraph 55).

Component 3: Project Implementation Support and Sustainability: This component will be implemented by both RHD and LGED and will finance associated services and goods for following sub-components:

[4] **Designated as growth centers by the Government of Bangladesh.**

Sub-Component 3(a): Training and Capacity building. This sub-component will finance training and capacity building activities of the implementing agencies as well as industry on selected priority areas including resilience, gender, Labor and Working Conditions, Occupational and Community Health and Safety, Gender Based Violence (GBV), cultural heritage assessment and impacts management; vulnerable groups and addressing their special needs, biodiversity and wildlife impact management, road safety, contract management, quality assurance, asset management, RoW/access management, travel demand modelling, project management, procurement, financial management, Environment and Social Framework (ESF). A detailed training plan will be submitted by implementing agencies at the beginning of the financial year for the approval of the World Bank.

Component 3(b): Strategic Environmental and Social Assessment (SESA). This sub-component will be implemented by RHD and finance consulting services for detailed Cumulative Impact Assessment of the Program's influence area when combined with past, ongoing and foreseeable future developments. The SESA will (i) assess the long-term risks and impacts of the MPA; (ii) inform the ESIAs of roads in the subsequent phases; and (iii) assist in developing and implementing a management plan that takes into account all risks and impacts.

Sub-component 3(c): Establishing Fiduciary Advisory Panel. This sub-component will be implemented by RHD and finance the engagement of fiduciary experts, satisfactory to the World Bank, including procurement and financial management experts. The terms of reference of the panel will be agreed by the World Bank and shall include but not be limited to overseeing the implementation of the component, particularly risks associated with delays in procurement evaluations and awards; variations and time and cost overruns; and delays in payments.

Sub-component 3(d): Establishing the Transport Sector Integration and Coordination Platform (TSICP) and operationalizing the Road Maintenance Fund Board Act. This sub-component will be implemented by RHD and finance the establishment of a Transport Sector Integration and Coordination Platform (TSICP) to facilitate focus group discussions, knowledge exchange workshops and meetings on various sector development issues. As the transport sector nodal ministry, the Ministry of Road Transport and Bridges (and RHD as its lead agency) will be responsible for managing TSICP. Participants will include donors, government ministries, agencies, universities and civil societies. The TSICP will be responsible for finalizing the scope of Phase 2. One of the key objectives of the TSICP in this MPA phase is to support the operationalization of the Road Maintenance Fund Board Act. The sub-component will finance services and individual experts required to maximize the effectiveness of the TSICP.

Sub-component 3(e): Preparatory Activities for Subsequent Program Phases. This sub-component will finance RHD and LGED preparatory activities and associated services, including but not limited to, identification, feasibility, safeguards assessments, design, surveys, investigations, data collection, individual experts, NGOs, impact evaluations and M&E.

Component 4: COVID-19 Relief and Recovery: This component will be implemented by both RHD and LGED to help GoB provide juts-in-time livelihood support to poor people in rural areas and stimulate local economy to help fight against COVID-19 emergency. This component will finance associated services and goods for following sub-components:

Component 4 (a): Provision of jobs through labor intensive civil work. This sub-component will be implemented by LGED and finance the immediate provision of labor-intensive small works contracts (e.g.

routine maintenance of roads, advance clearing and grubbing of roadway width which we are going to be improved under the Project, flood control and protection works around culverts/bridges, village and market drainage and protection works, market cleaning and maintaining hygiene) that will provide just-in-time livelihood support to poor people in rural areas and stimulus to the local economy. A Labor Contracting Society (LCS) model, that has previously been used in Bangladesh, will be utilized to organize vulnerable local population into groups that are contracted to carry out the afore-mentioned works. These works are estimated to generate approximately 1.3 million days of rural employment in 6 months. The financing of such works will also include provision of protocols and personal protective equipment to ensure the safety the workers who are employed.

Component 4 (b): Development of an Emergency Response Plan for COVID-19. This sub-component will be implemented by RHD and LGED and will finance the development and dissemination of an action plan that will enhance emergency preparedness, management, and response capacity of the two leading transport agencies to mitigate and respond to the risks posed by COVID-19. This plan will include measures to minimize the chances and contain the spread of the COVID-19 due to movement of staff and workers, and sensitization them and local communities regarding what to do if an outbreak occurs and how treatment will be provided. The plan will define procedures for isolation, testing and treatment including getting adequate supplies of water, food, medicines and medical equipment and cleaning equipment in the event of an outbreak at LGED and RHD offices and project offices/sites, especially should access to the site become restricted or movements of supplies limited. The plan will be communicated widely (through workshops and group trainings) to RHD and LGED staff, consultants, workers, contractors, sub-contractors, suppliers, adjacent communities, nearby projects/workforces, and local healthcare authorities to make them aware of the preparations that have been made. The plan will also include reporting mechanism for incidents/outbreak at any Program offices/sites.

Component 4 (c). Provision of necessary physical upgrades to transport agencies. This sub-component will be implemented by RHD and LGED and will provide the necessary physical upgrades to ensure business continuity in response to COVID-19 and future crises. To this end, it will finance improving digital connectivity between various offices of RHD and LGED and improving the work environment at both agencies. Notably, high-speed internet connections and IT services will be provided at RHD and LGED Head Quarters, PIUs and field divisions. And additional hygiene measures at RHD and LGED Head Quarters, PIUs and field divisions will be implemented to improve the work environment safety of the staff at both agencies.

Component 5 - Contingent Emergency Response: This component will improve the GoB's ability to respond effectively in the event of an emergency in line with WB procedures on disaster prevention and preparedness. Following an eligible crisis or emergency, the Recipient may request the Bank to re-allocate project funds to support emergency response and reconstruction. This component would draw from other project components to cover emergency response.

2.3 Project Development Objectives (PDO)

The Project Development Objectives (PDOs) of the project is to provide efficient, safe, and resilient connectivity along a section of a regional transport corridor in Western Bangladesh and reduce post-harvest losses in the hinterland of section.

However, key results of the proposed WeCARE program are:

The PDO will be achieved over a 10-year period through a three-phase MPA program, starting with Phase 1 ("the project"). Key PDO indicators are as follows, the base line and end targets will be identified during late stage of project formulation and preparation.

I. Percentage change in the efficiency of transportation on highway corridor of the Program (measured using value of time and vehicle operating cost savings).
II. Average transport time to Program markets from the closest intersection with the Program highway for targeted value chains.
III. Improvement in condition of overall national road network.

The proposed program will enhance regional connectivity and economic integration and development of the Western Region both in current and post-Padma demand scenario, through addressing the following long-standing transport sector challenges, relevant to not only the Western Region but also to all of Bangladesh:

I. Congested and unsafe road network, resulting in excessively high logistics costs and constraining Bangladesh and the western region from leveraging its strategic geographical position as major trade and transit hub for South and Southeast Asia;
II. Substantial post-harvest losses especially among small farm families in rural areas because of limited connectivity, market access and agro-logistics facilities;
III. Weak road sector management in terms of planning, implementation, and operation maintenance

2.4 Sub-project Types (Typology)-LGED Component

The Typology of subproject includes:

- Improvement and Modernizing of potential Growth centers, Markets and Ghats in Program districts (Jashore, Jhenaidah, Satkhira, Magura, Chuadanga, Kushtia, Pabna, Meherpur, Natore and Sirajganj)
- Improvement, widening and capacity enhancement of LGED Feeder Roads as CORE ROAD;
- Improvement of village/farm/hinterland roads aligned to CORE ROADs;
- Integrate and connect the Railway stations to the road network with the best possible connectivity;
- Improvement of new and possible linkage with proposed Economic Zone;
- Integrate Road with Riverine/Water route, Multimodal Transport;
- Improvement or Construction of road connected with markets with hinterlands and also improvement of collection hub or collection center at or near to alignments proposed for improvement. These hub or collection center will reduce post-harvesting loss and will ensure an effective value chain;
- Laying of "Fiber Optic Cable" that will be engraved along the proposed alignment;
- Landscaping at Market Places, Bridge approaches, road dividers and other spaces;
- Construction of Road Safety infrastructures
- Solar powered automated railway crossing;

Following will corporate the investment packages under LGED:

1. Construction/Rehabilitation of Core Road network not limited to district boundaries. These Core roads will include:
    - New Road Construction and Road widening and both will need land acquisition
    - Capacity enhancement/ Lane increment of existing roads
    - Drainage structures and capacity enhancement
    - Road dividers
    - Lightening the developed and urban part
    - Landscaping
    - Planting tress where trees has been chopped down including barren road slope and shoulders
2. Construction of Village road connecting Core Road and the GCM and RM.
3. Development Market infrastructure and logistics, will include:
    - Different sheds with separate space for women vendors
    - Multistory shopping where space is congested
    - Waste water drainage with treatment option
    - Cool room/storage where applicable
    - Community centers/ Community space for different ceremony/occasions
    - Green space (only for recreation and trading is prohibited)
    - Toilets (to be leased out by MMC)
    - Piped Water supply system with overhead tank
    - Internal road and open space by Uni-block or Cell-fill concrete
    - Parking space, landscaping and wall cladding with vegetation
    - Solid waste management and sludge treatment plant
    - Laboratory to calibrate the weighing tools, kits for checking formalin or other chemicals
    - Providing Ghat, ferry landing, pontoons if the market situated on or near to river
    - Dredging of River/Canals adjacent to Market to promote riverine transport
    - Provision of future settlement surrounding Markets; to prepare Mater Plan
    - By-pass road where the CORE ROAD bisected the Markets or Economic Centers
    - Barriers to prevent Trades sitting road ride
    - Ramps for loading/unloading on road side markets
    - Biogas plant: includes Vegetable rubbish, Sludge from Storm sewage, Slaughter House etc.
    - Plastic Recycling: entrepreneur to be invited
    - WtE plant: entrepreneur to be invited
    - Installation of Grid integrated Solar roof under Net metering policy 2018
    - Road side Traffic Shed with Toilet facilities
    - Child Care with amusement facilities
    - Re-excavation of Existing Pond and renovate to Green space
    - CCTV camera for theft protection and law and order
    - Digital display board with details market information, commodity rates, Government instructions and awareness campaign, information of lease-holder
    - Cyclone shelter in cyclone prone area (Satkhira, Part of Jashore etc.) with emergency amenities, kits etc.
    - Firefighting arrangement

- Land for BSCIC and entrepreneur Bank
- IT park/village or space for Outsourcing entrepreneur
- Training space for Women e.g. Beauty Parlor, Tailoring, goat rearing etc.
- Rainwater harvesting arrangement
- MMC Office with exclusive arrangement e.g. library, wide screen display etc.
- Space for Black smith and other industry dealing with fire and hazardous chemical
- Cattle market improvement/Capacity enhancement
- Flower market with training of farmers on cut flower,

4. Construction of connecting road to local farms and collection centers, will include:
    - Small sheds may need land acquisition
    - Trucks/Lorry Parking Space
    - Road widening/Capacity improvement
    - Barrier to main road
    - Open Storage space
    - Ramps with approach road for track loading/unloading
    - Drainage
    - Vegetable waste treatment/ Composting
    - Toilets
    - Water supply
    - Small laboratory to check the formalin or other chemical
5. Labor-intensive maintenance works
    - Routine maintenance of roads
    - Advance clearing and grubbing of roadway width which we are going to be improved under the Project
    - Repairs of flood control and protection works around culverts/bridges, village and market drainage and protection works
    - Market cleaning and maintaining hygiene that will provide just-in-time livelihood support to poor people in rural areas and stimulus to the local economy.

Thus, the ambitions of the LGED components are:

1. Catalyze sustainable economic development and regional integration of the Western region of Bangladesh
2. Build a model approach to Economic Corridor Development (with special emphasis on maximizing wider economic benefits along the corridor and on inclusion)
3. Leverage the phased approach to transform the Transport Sector:
    - Enhance the sustainability of transport sector
    - Enhance integration of transport modes
    - Enhance coordination across agencies that are responsible for all modes of transport
4. Facilitate the development of modern, efficient and transparent agencies for the road sector:
    - Better planning and coordination
        - Robust data collection using new technologies and in house network modeling capabilities
        - Robust asset management system (including maintenance and budget planning)

    - Develop coordination across all transport agencies to plan multimodal transport
- Better corporate governance in RHD and LGED
    - Shift towards developing a traffic control system (for example, road safety, axel load management)
    - Build robust internal governance procedures (for example, internal audit mechanism and increased public disclosure to improve transparency)
- Mainstreaming innovations in the agencies
    - Digital workflow management system
    - Innovations in contracting type, asset management & axel load control
    - Mainstream road safety across the network

2.5 Project Location

The Program will include Ten (10) Districts namely Jashore, Jhenaidah, Magura, Satkhira, Kushtia, Pabna, Natore, Chuadanga, Meherpur and Sirajganj. However, Phase I funded by WB will only cover the Jashore-Jhenaidah segment and its connecting rural roads and GCs. WeCARE program corridor with highlighting Phase 1 location area is shown in Figure 2.1. Combined Map of the Corridor, LGED Components and Activities under WeCARE is given in Figure 2.2. District wise location maps of the WeCARE corridor Phase 1 are furnished in 2.3a-2.3d.

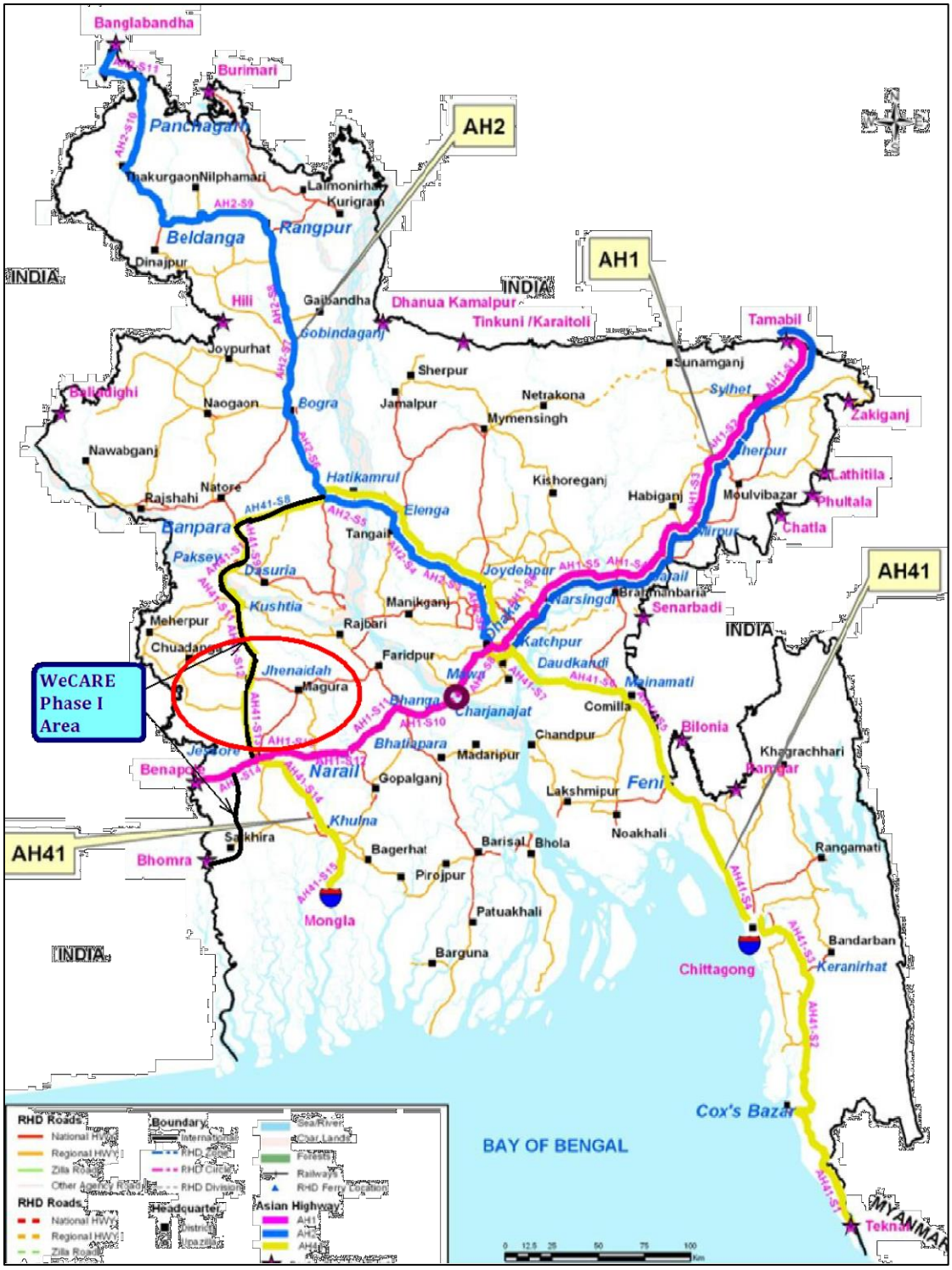


Figure 2.1: WeCARE Program Corridor and Phase I area shown in red circle

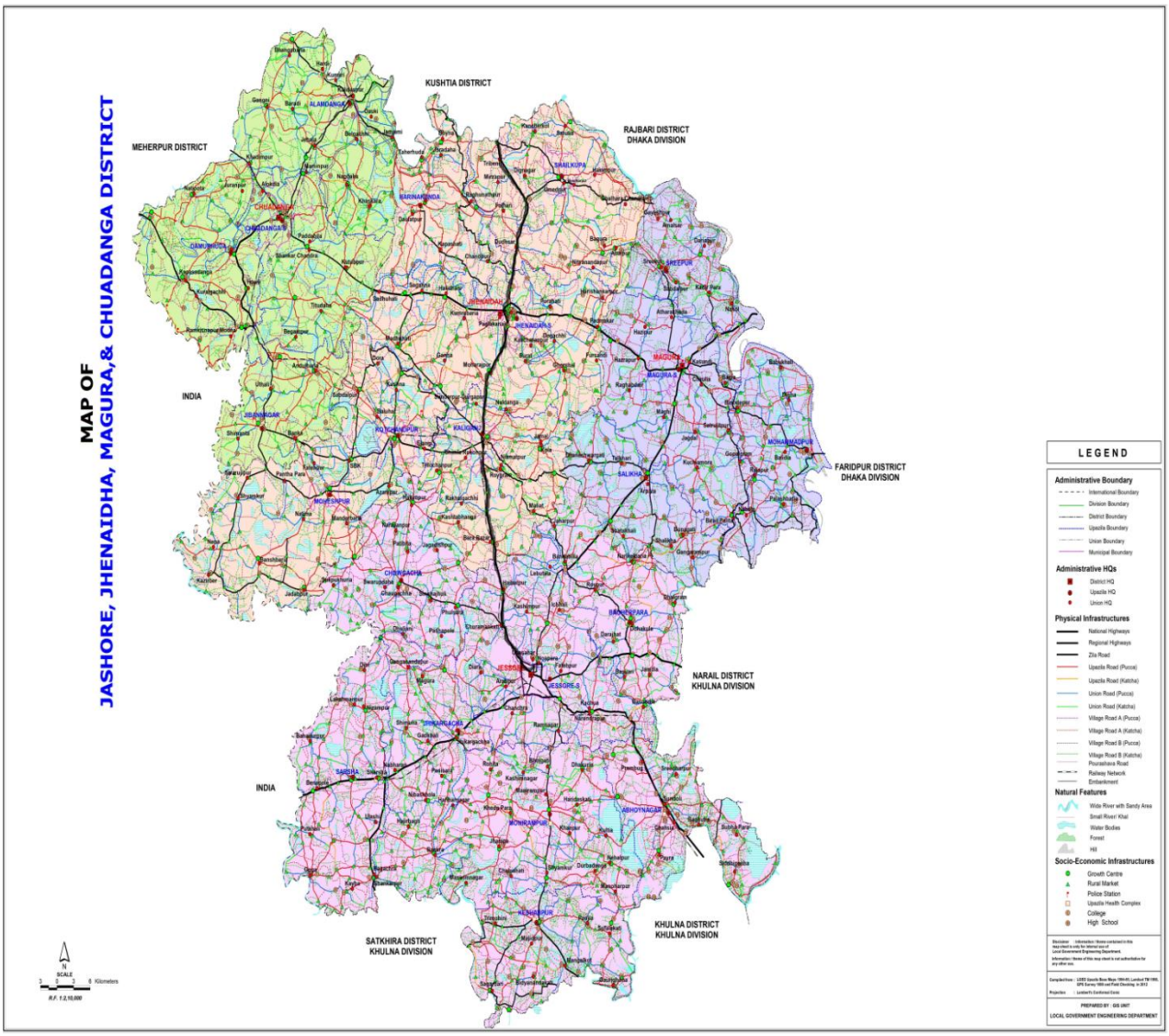


Figure 2.2: Combined Map WeCARE: Phase I: Jashore, Jhenaidah, Magura and Chuadanga

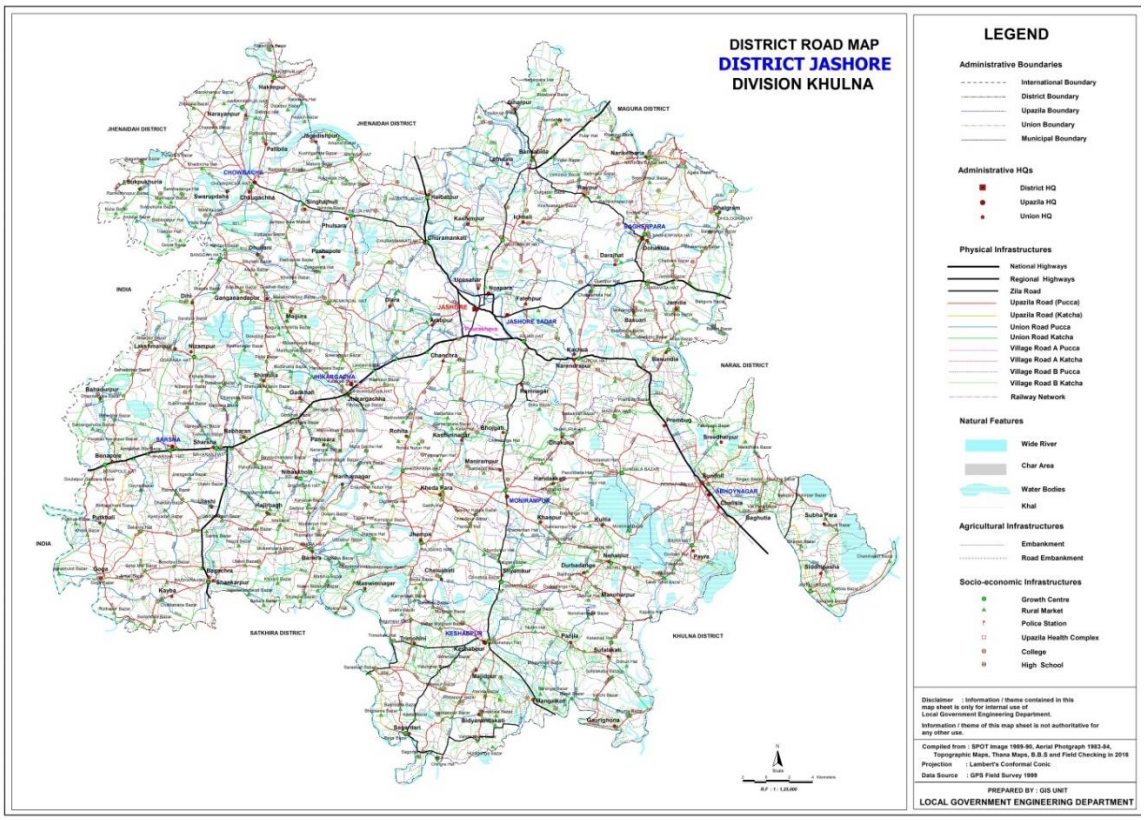


Figure 2.3a: Map of Jashore: Components shown in the legends

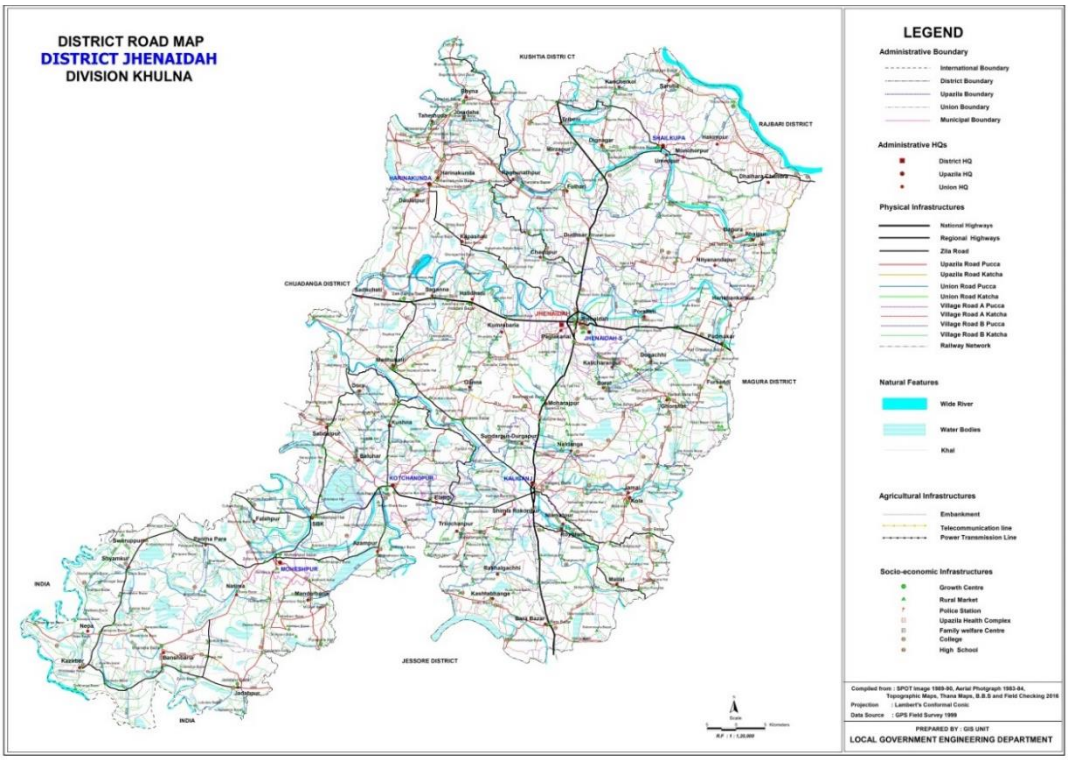


Figure 2.3b: Map of Jhenaidah: Components shown in the legends

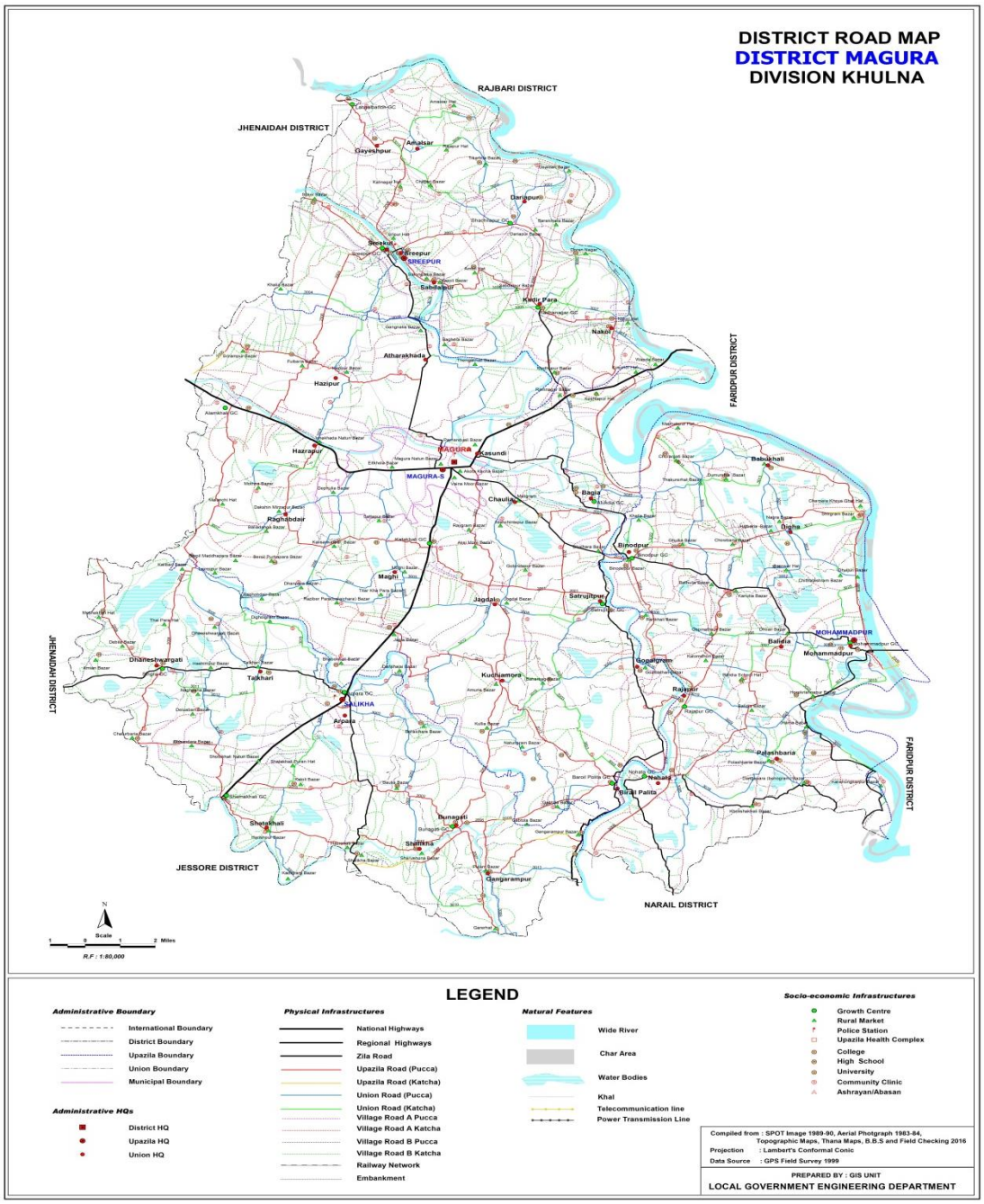


Figure 2.3c: Map of Magura: Components shown in the legends

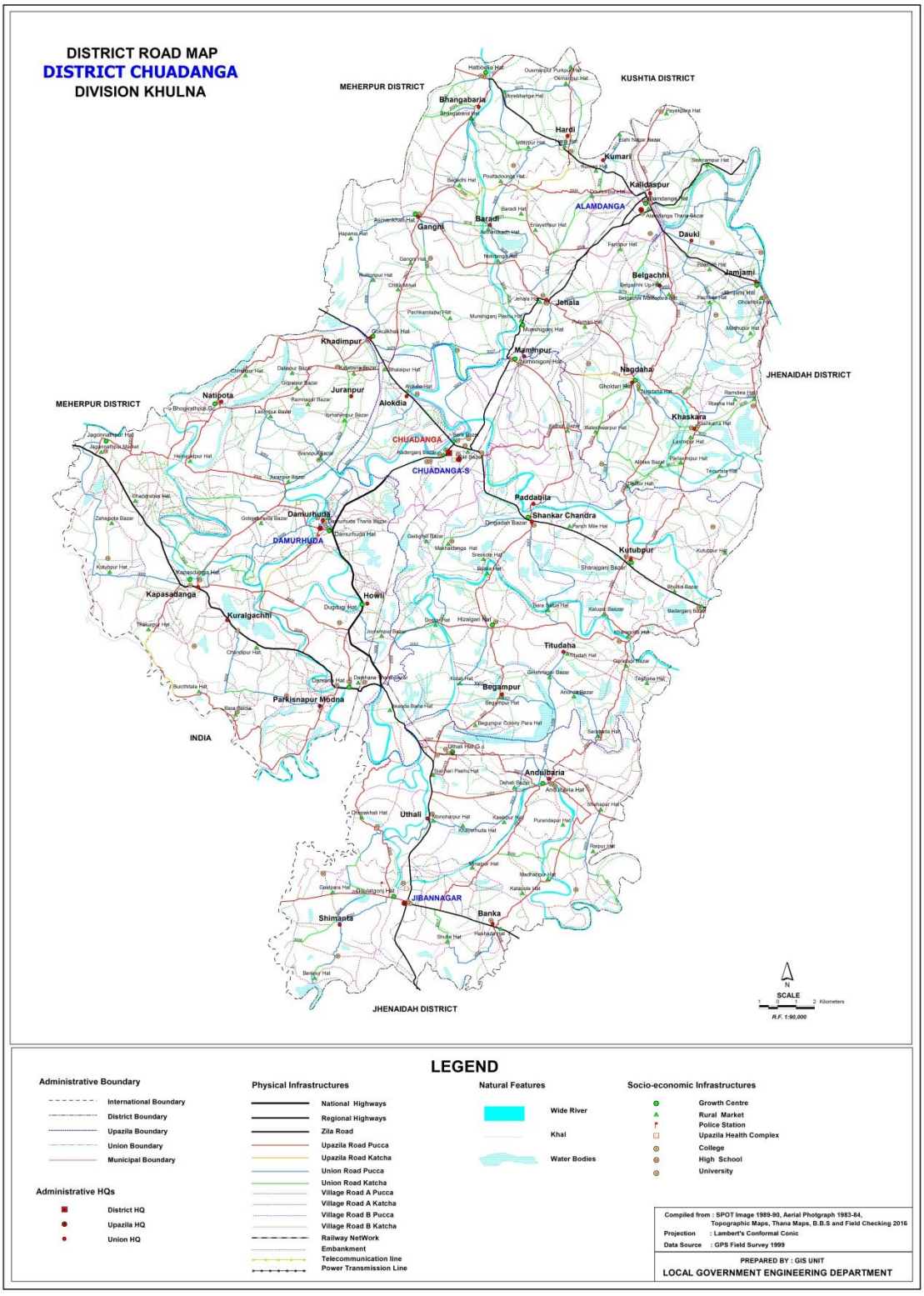


Figure 2.3d: Map of Chuadanga: Components shown in the legends

Chapter 3: Policy, Legal and Regulatory Framework

This Chapter presents a review of the national policy, legal, and regulatory framework relevant to the environmental and social aspects of the WeCARE Program. In addition to the national environmental and social FW, WB ESF are also been discussed.

3.1 Review of National Environmental and Social Policy, Legal and Regulatory Framework

All relevant national policies, strategies, plans, acts, rules and regulations laid out by the Government of Bangladesh pertaining to the environment and social aspects are briefly discussed in **Annex A.**

Table 3.1 below lists only some most important applicable key GOB acts, rules and regulations and their relevance to this WeCARE sub-projects of LGED.

Table 3.1 Summary of Applicable Environmental, Social and Safeguards Regulations of GOB

S.No.	Policies/Act/Rules	Key provisions and purpose	Applicability to WeCARE sub-projects/LGED
1.	Bangladesh Environmental Conservation Act (ECA), 1995	This umbrella Act includes laws for conservation of the environment, improvement of environmental standards, and control and mitigation of environmental pollution. According to this act (Section 12), no industrial unit or project shall be established or undertaken without obtaining, in a manner prescribed by the accompanying Rules, an Environmental Clearance Certificate (ECC) from the Director General of DoE.	Yes, sub-projects has to get ECC.
2.	Bangladesh Environmental Conservation Rules (ECR), 1997	The Rule 7 classifies industrial units and projects into four categories depending on environmental impact and location for the purpose of issuance of ECC. These categories are: Green, Orange A, Orange B, and Red. The ECR'97 describes the procedures for obtaining Environmental Clearance Certificates (ECC) from the Department of Environment for different types of proposed units or projects.	Yes, some of the LGED sub-projects may be fallen under Orange B category, hence require both IEE, ESIA and ESMP approved by the DoE and have to deposit prescribe fees according to the schedule 13 to obtain ECC.
3.	Bangladesh Environment Court Act, 2010	Bangladesh Environment Court Act, 2010 has been enacted to resolve the disputes and establishing justice over environmental and social damage raised due to any development activities.	According to this act, government can take legal actions if any environmental problem occurs due to WeCARE interventions.
4.	The Protection and Conservation of Fish Act (1950)	This Act provides power to the government to: make and apply rules to protect fisheries; prohibit or regulate erection and use of fixed engines; and construction of temporary or permanent	Yes, as the sub-projects includes road expansion/re-construction including bridges/culverts, construction of ghats, landing centers, markets, etc. which has

S.No.	Policies/Act/Rules	Key provisions and purpose	Applicability to WeCARE sub-projects/LGED
		weirs, dams, bunds, embankments and other structures.	potential risk for water pollution, habitat alternation, hinder of natural flow/migration.
5.	Protection and Conservation of Fish Rules (1985)	Section 6 states, "No person shall destroy or make any attempt to destroy any fish by poisoning of water or the depletion of fisheries by pollution, by trade effluents or otherwise in inland waters.	Yes, mostly during construction of the sub-projects.
6.	Bangladesh Wildlife (Protection and Preservation) Act 2012	The Act protects 1,307 species of plants and animals, including 32 species of amphibian, 154 species of reptile, 113 species of mammal, 52 species of fish, 32 species of coral, 137 species of mollusk, 22 species of crustacean, 24 species of insect, six species of rodent, 41 species of plant and 13 species of orchid. Of these, eight amphibian, 58 reptile, 41 bird, and 40 mammal species are listed as endangered in the IUCN Red Data Book (2000, updated in 2015).	Yes, the sub-projects area might have presence of these listed threatened animals.
7.	Biodiversity Act, 2017	It provides for the creation of the National Committee and the Biodiversity Management and Surveillance Committees at local levels (i.e. Districts, Upazilas, Municipalities, and Unions). In general, all these committees are mandated to: assist the Government in implementing the National Biodiversity Strategy and Action Plan (NBSAP) and to visit the biodiversity enriched areas in their respective territories; and, monitor the progress of implementation of the NBSAP.	Yes, all sub-projects need to include these local committees, so that they can monitor project impact on the local biodiversity.
8.	Forest Act 1927 (Amendment 2000)	The act empowers the government to regulate the felling, extraction, and transport of forest produce in the country.	Yes, sub-projects will include felling of trees and social forestry.
9.	Embankment and Drainage Act, 1952	The Act consolidates the laws relating to embankments and drainage providing provision for the construction, maintenance, management, removal and control of embankments and water courses for the better drainage of lands and for their protection from floods, erosion or other damage by water.	Yes, sub-projects will include interventions in the water bodies, construction of bridges, ghats, etc.
10.	Bangladesh Water Act, 2013	As per this Act, all forms of water (e.g., surface water, ground water, sea water, rain water and atmospheric water) within the territory of Bangladesh belong to the	Yes, LGED is permitted to implement water projects covering impact area below 1000 hectare (>1000 ha).

S.No.	Policies/Act/Rules	Key provisions and purpose	Applicability to WeCARE sub-projects/LGED
		government on behalf of the people. Without prior permission issued by the Executive Committee, no individuals or organizations will be allowed to extract, distribute, use, develop, protect, and conserve water resources, nor they will be allowed to build any structure that impede the natural flow of rivers and creeks.	
11.	Bangladesh Labour Act, 2006	It provides the guidance of employer's extent of responsibility and workmen's extent of right to get compensation in case of injury by accident while working.	Yes, sub-projects require substantial labour from local and external areas.
12.	Bangladesh National Building Code, 2006	The BNBC clearly sets out the constructional responsibilities according to which the relevant authority of a particular construction site shall adopt some precautionary measures to ensure the safety of the workmen. The Code also clarifies the issue of safety of workmen during construction.	Yes, sub-projects will include construction of market, landing centers, etc.
13.	The Noise Pollution Control Rules, 2006	The Noise Pollution Control Rules have been established in order to manage noise generating activities which have the potential to impact the health and wellbeing of workers and the surrounding communities.	Yes, many activities of sub-projects will be performed under the dense populated areas.
14.	Road Transport Act, 2018	The new Road Transport Act 2018 has finally come into effect at the start of November. After the long-standing Motor Vehicle Ordinance of 1983, the new act introduces a myriad of updated laws and adds new definitions for what constitutes an offence, with most of the fines and punishments receiving major bumps.	Yes, sub-projects will use heavy vehicles, deploy drivers and operators of machineries.
15.	Rules for Removal of Wrecks and Obstructions in inland Navigable Water Ways (1973)	Rules for removal of wrecks and obstructions	Yes, if obstruct natural canals/rivers or any other natural water ways (includes seasonal water bodies).
16.	The Water Supply and Sanitation Act (1996)	Regulates the management and control of water supply and sanitation in urban areas.	Yes, sub-projects will include construction of water supply and sanitation facilities
17.	The Ground Water Management Ordinance (1985)	Describes the management of ground water resources and licensing of tube wells	Yes, construction sites of the sub-projects may require deep tube wells for meeting up water use.
18.	The Antiquities Act (1968)	Describes the preservation of cultural heritage, historic monuments and protected sites	Yes, sub-projects areas may have elements of cultural, historic and protected value.

S.No.	Policies/Act/Rules	Key provisions and purpose	Applicability to WeCARE sub-projects/LGED
19.	Acquisition and Requisition of Immovable Property Act, 2017	The principal legal instrument governing land acquisition in Bangladesh is the Acquisition and Requisition of Immovable Property.	Yes, both acquisition and requisition of land, and other properties would require by the sub-projects.

3.2 Applicable International Treaties Signed by the GoB

Bangladesh has signed most international treaties, conventions and protocols on environment, pollution control, bio-diversity conservation and climate change, including the RAMSAR Convention, the Bonn Convention on Migratory Birds, the Rio de Janeiro Convention on Biodiversity Conservation, and the Kyoto Protocol on Climate Change. An overview of the relevant international treaties signed by GoB is shown in Table 3.2.

Table 3.2: Relevant International Treaty or Conventions and Responsible Agency

Treaty	Year	Brief Description/Relevance to the WECARE	Relevant Department
Protection of birds (Paris)	1950	Protection of birds in wild state Broadly applicable for birds in and around the project influence area; mitigation measures included in ESMP address potential impacts on birds as well.	DoE/DoF
Ramsar Convention	1971	Protection of wetlands. Broadly applicable for wetlands in and around the project influence area; mitigation measures included in ESMP address potential impacts on wetlands and associated resources as well.	DoE/DoF
Protocol on Waterfowl Habitat	1982	Amendment of Ramsar Convention to protect specific habitats for waterfowl. Broadly applicable for wetlands in and around the project influence area; mitigation measures included in ESMP address potential impacts on wetlands and associated ecological resources as well.	DoE/DoF
World Cultural and Natural Heritage (Paris)	1972	Protection of major cultural and natural monuments. Not applicable since no major cultural or natural monuments are known to exist in the project influence area. However Chance Find Procedures have been included in the ESMP	DoArch
CITES convention	1973	Ban and restrictions on international trade in endangered species of wild fauna and flora.	DoE/DoF

Treaty	Year	Brief Description/Relevance to the WECARE	Relevant Department
		Not directly relevant to the WECARE since the project does not involve in any international trade of endangered species of wild fauna and flora. General restrictions have however been included in the Environmental Code of Practice.	
Bonn Convention	1979	Conservation of migratory species of wild animals. Broadly applicable to the migratory birds in and around the project influence area. Project activities are not likely to have any significant impacts on these species; precautionary measures have nonetheless been included in ESMP.	DoE/DoF
Prevention and Control of Occupational hazards	1974	Protect workers against occupational exposure to carcinogenic substances and agents. Broadly applicable to the construction and O&M activities under the project. Appropriate mitigation and protective measures have been included in the ESMP.	MoH
Occupational hazards due to air pollution, noise & vibration (Geneva)	1977	Protect workers against occupational hazards in the working environment. Broadly applicable to the construction and O&M activities under the project. Appropriate mitigation and protective measures have been included in the ESMP.	MoH
Occupational safety and health in working environment (Geneva)	1981	Prevent accidents and injury to health by minimizing hazards in the working environment. Broadly applicable to the construction and O&M activities under the project. Appropriate mitigation and protective measures have been included in the ESMP.	MoH
Occupational Health services	1985	To promote a safe and healthy working environment. Broadly applicable to the construction and O&M activities under the project. Appropriate mitigation and protective measures have been included in the ESMP.	MoH
Convention on oil pollution damage (Brussels)	1969	Civil liability on oil pollution damage from ships. Not applicable since no oil carrying cargos are involved in the proposed project.	DoE/MoS

Treaty	Year	Brief Description/Relevance to the WECARE	Relevant Department
Civil liability on transport of dangerous goods (Geneva)	1989	Safe methods for transport of dangerous goods by road, railway and inland vessels. Broadly applicable to transportation of substances such as fuels during the project construction phase. Appropriate mitigation measures are included in the ESMP.	MoC
Safety in use of chemicals during work	1990	Occupational safety of use of chemicals in the work place. Broadly applicable to the construction and O&M activities under the project. Appropriate mitigation and protective measures have been included in the ESMP.	DoE
Convention on oil pollution	1990	Legal framework and preparedness for control of oil pollution. Broadly applicable to the construction and O&M activities under the project. Appropriate mitigation and protective measures have been included in the ESMP.	DoE/MoS
UN framework convention on climate change (Rio de Janeiro)	1992	Regulation of greenhouse gases (GHGs) emissions. Broadly applicable to the construction and O&M activities under the project. Appropriate mitigation and protective measures have been included in the ESMP to minimize emissions of GHGs.	DoE
Convention on Biological Diversity (Rio de Janeiro)	1992	Conservation of bio-diversity, sustainable use of its components and access to genetic resources. Broadly applicable to the construction and O&M activities under the project. Appropriate mitigation and protective measures have been included in the ESMP for the conservation of biodiversity.	DoE
International Convention on Climate Changes (Kyoto Protocol)	1997	International treaty on climate change and emission of greenhouse gases. Broadly applicable to the construction and O&M activities under the project. Appropriate mitigation and protective measures have been included in the ESMP to minimize emissions of GHGs.	DoE
Strategic Action Plan for Bay of Bengal	2012 endorsement; 2016 signed by MoFL/MoEFCC of GoB	This Strategic Action Programme (SAP) is based on the Transboundary Diagnostic Analysis (TDA) which was endorsed in March 2012 by the eight countries of the BOBLME. The TDA draws on over ten years	MoFL/MoEFCC

Treaty	Year	Brief Description/Relevance to the WECARE	Relevant Department
		of studies, reviews and analyses. It identifies the main transboundary issues and their causes, and it reviews the driving forces at work in the BOBLME, such as the socio-economic, institutional, legal and administrative circumstances and the projected impact of climate change on the region. These forces all pose a range of constraints and challenges and have the potential to influence the success of actions implemented to address the main areas of concern. The SAP is a negotiated policy document that sets out a programme of actions which address the causes of the major fisheries, environmental and social and economic issues. The development of the SAP has been guided by the BOBLME Project Steering Committee which comprised senior-level government officers from the fisheries and environmental agencies in each country. This SAP is the 2015 versions, expanded with the signatures of 16 government partner institutions, endorsing it for the implementation of the 2nd phase.	

3.3 World Bank's Environmental and Social Framework

Since October 2018, all World Bank funded Investment Project Financing (IPF) are required to follow the **Environmental and Social Framework (ESF) consisting of ten (10) Environment and Social Standards (ESSs).** These ESSs set out their requirement for the LGEDs relating to the identification and assessment of environmental and social risks and impacts associated with any project. The ESSs support the LGEDs in achieving good international practice relating to environmental and social sustainability, assist them in fulfilling their national and international environmental and social obligations, enhance transparency and accountability and ensure sustainable development outcome through ongoing stakeholder engagement.

The ESF sets out its commitment to sustainable development, through Bank Policy and a set of Environmental and Social Standards that are designed to support LGEDs' projects, with the aim of ending extreme poverty and promoting shared prosperity. The part of Bank's Environmental and Social Policy for investment project financing sets out the requirement that the Bank must follow regarding projects it supports through Investment Project Financing that include:

- Environmental and social risk classification
- Use and strengthening of LGED's environmental and social framework
- Environmental and social due diligence
- Special project types.
- Environmental and Social Commitment Plan (ESCP)
- Information disclosure
- Consultation and participation
- Monitoring and implementation support.
- Grievance mechanism and accountability

On the other hand, following set of standards are requirements for LGEDs to abide by:

1. Environmental and Social Standard 1: Assessment and Management of Environmental and Social Risks and Impacts;
2. Environmental and Social Standard 2: Labor and Working Conditions;
3. Environmental and Social Standard 3: Resource Efficiency and Pollution Prevention and Management;
4. Environmental and Social Standard 4: Community Health and Safety;
5. Environmental and Social Standard 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement;
6. Environmental and Social Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources;
7. Environmental and Social Standard 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities;
8. Environmental and Social Standard 8: Cultural Heritage;
9. Environmental and Social Standard 9: Financial Intermediaries; and
10. Environmental and Social Standard 10: Stakeholder Engagement and Information Disclosure.

OP/BP7.50, Projects on International Waterways; and OP/BP7.60, Projects in Disputed Territories.

Brief description of the 10 ESSs, their objectives and requirements are given in **Annex 2.**

Table 3.3 summarize the ESS requirements and their relevance to the LGED sub-projects:

Table 3.3 WB ESS requirements and relevance to the WeCARE sub-projects

World Bank ESS Policy, Standards, Directive	Objectives	Requirements	Relevance & Extent of Relevance to the sub-project/project
World Bank Environment and Social Policy for Investment	It sets out the mandatory requirements of the Bank in relation to the projects it supports through Investment Project Financing.	The types of E&S risk and impacts that should be considered in the environmental and social assessment. The use and strengthening of the Borrower's	Applicable to the WeCARE project and it's all sub-projects

World Bank ESS Policy, Standards, Directive	Objectives	Requirements	Relevance & Extent of Relevance to the sub-project/project
Project Financing		environmental and social framework for the assessment, development and implementation of World Bank financed projects where appropriate.	
ESS-1 Assessment and Management of Environmental and Social Risks and Impacts	Identify, assess, evaluate, and manage environment and social risks and impacts in a manner consistent with the ESF. Adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and they are not disadvantaged in sharing development benefits and opportunities	The types of E&S risk and impacts that should be considered in the environmental and social assessment. The use and strengthening of the Borrower's environmental and social framework for the assessment, development and implementation of World Bank financed projects where appropriate.	E&S risks and Impacts have been preliminary identified based on consultations with primary stakeholders including communities and implementing agency. Detailed ESIA and ESMP will be prepared in addition to this ESMF.
ESS-2 Labor-and-Working-Conditions	Promote safety and health at work. Promote the fair treatment, non-discrimination, and equal opportunity of project workers. Protect project workers, with particular emphasis on vulnerable workers. Prevent the use of all forms of forced labor and child labor. Support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law. Provide project workers with accessible means to raise workplace concerns.	Requirements for the Borrower to prepare and adopt labor management procedures. Provisions on the treatment of direct, contracted, community, and primary supply workers, and government civil servants. Requirements on terms and conditions of work, non-discrimination and equal opportunity and workers organizations. Provisions on child labor and forced labor. Requirements on occupational health and safety, in keeping with the World Bank Group's Environmental, Health, and Safety Guidelines (EHSG).	A separate LMP has been prepared, besides other site specific management plans (e.g. OHS) will be prepared during construction phase, suggested by the ESMP to be prepared, which defines measures to be taken to address this ESS2.
ESS-3 Resource-Efficiency-and-Pollution-Prevention-and-Management	Promote the sustainable use of resources, including energy, water, and raw materials. Avoid or minimize adverse impacts on human health and the environment caused by pollution from project activities. Avoid or minimize project-related emissions of short and long-lived climate pollutants. Avoid or minimize generation of hazardous and non-hazardous waste. Minimize and manage the risks and impacts associated with pesticide use. Requires technically and financially feasible measures	Requires an estimate of gross greenhouse gas emissions resulting from project (unless minor), where technically and financially feasible. Requirements on management of wastes, chemical and hazardous materials, and contains provisions to address historical pollution. ESS-3 refers to national law and Good International Industry Practice, in the first instance the World Bank Groups' EHSGs.	With respect to Resource Efficiency, the project preparation and the ESA process will identify feasible measures for efficient (a) energy use; (b) water usage and management to minimize water usage during construction, conservation measures to offset total construction water demand and maintain balance for demand of water resources; and (c) raw materials use by exploring use of local materials, recycled

World Bank ESS Policy, Standards, Directive	Objectives	Requirements	Relevance & Extent of Relevance to the sub-project/project
	to improve efficient consumption of energy, water, and raw materials, and introduces specific requirements for water efficiency where a project has high water demand.		aggregates, use of innovative technology so as to minimize project's foot prints on finite natural resources. With respect to Pollution Management, based on past road project experiences by LGED, the project will develop, as part of the ESA process, prevention and management measures to offset risks and impacts of pollution from potential sources such as dust and emission from operation of hot-mix and batching plants, crushers, construction and haulage vehicles, material and spoil stockpile; effluents and wastewater from labor camps, construction camp; spillage or leakage during handling of chemical admixtures, hazardous materials like bitumen, high strength diesel, used oil, battery wastes etc.; and disposal of non-hazardous wastes (municipal wastes) generated during project implementation period.
ESS-4 Community-Health-and-Safety	Anticipate or avoid adverse impacts on the health and safety of project-affected communities during project life-cycle from routine and non-routine circumstances. Promote quality, safety, and climate change considerations in infrastructure design and construction, including dams. Avoid or minimize community exposure to project-related traffic and road safety risks, diseases and hazardous materials. Have in place effective measures to address emergency events. Ensure that safeguarding	Requirements on infrastructure, taking into account safety and climate change, and applying the concept of universal access, where technically and financially feasible. Requirements on traffic and road safety, including road safety assessments and monitoring. Addresses risks arising from impacts on provisioning and regulating ecosystem service. Measures to avoid or minimize the risk of water-related, communicable, and non-communicable diseases. Requirements to assess risks associated with security personnel,	In the WeCARE project corridor there is likely to be i) road excavation, use of vibratory equipment, construction debris handling and disposal etc. during construction; ii) high likelihood of direct exposure to increased construction related traffic and equipment especially at road sections traversing settlement area with limited carriageway/roadway width, and sensitive receptors such as schools, religious place,

World Bank ESS Policy, Standards, Directive	Objectives	Requirements	Relevance & Extent of Relevance to the sub-project/project
	of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities.	and review and report unlawful and abusive acts to relevant authorities.	health centre/hospitals; iii) high dust levels from earthworks/hill cutting, high noise and emission level from traffic congestion and idling of vehicles; and iv) influx of migrant workers could potentially cause local discomfort or potential conflicts with local people. Site specific management plans will be developed following the guideline of ECoPs.
ESS-5 Land-Acquisition-Restrictions-on-Land-Use-and-Involuntary-Resettlement	Avoid or minimize involuntary resettlement by exploring project design alternatives. Avoid forced eviction. Mitigate unavoidable adverse impacts from land acquisition or restrictions on land use by providing compensation at replacement cost and assisting displaced persons in their efforts to improve, or at least restore, livelihoods and living standards to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher. Improve living conditions of poor or vulnerable persons who are physically displaced, through provision of adequate housing, access to services and facilities, and security of tenure. Conceive and execute resettlement activities as sustainable development programs.	Applies to permanent or temporary physical and economic displacement resulting from different types of land acquisition and restrictions on access. Does not apply to voluntary market transactions, except where these affect third parties. Provides criteria for "voluntary" land donations, sale of community land, and parties obtaining income from illegal rentals. Prohibits forced eviction (removal against the will of affected people, without legal and other protection including all applicable procedures and principles in ESS5). Requires that acquisition of land and assets happens only after payment of compensation and resettlement has occurred. Requires community engagement and consultation, disclosure of information and a grievance mechanism.	**A separate RPF has been prepared to address ESS5.** Land will be required for widening, upgradation works in identified sub-projects and possibly for rehabilitation works, curve/geometric improvements, blind spots, construction of markets and other infrastructures, etc. Hence impacts on land, private and community owned assets including structures, trees and crops within existing and proposed ROW is likely. Physical and economic displacement too is very likely. Guideline provided in the RPF associated with this ESMF will follow for each sub-projects.
ESS-6 Biodiversity-Conservation	Protect and conserve biodiversity and habitats. Apply the mitigation hierarchy and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity. To promote the sustainable management of living natural resources.	Requirements for projects affecting areas that are legally protected designated for protection or regionally/internationally recognized to be of high biodiversity value. Requirements on sustainable management of living natural resources, including primary production and harvesting,	Site clearance activities for road, building constructions will involve removal of vegetation and felling of trees. Site specific plantation plan, and Biodiversity Management and Conservation Plan will be

World Bank ESS Policy, Standards, Directive	Objectives	Requirements	Relevance & Extent of Relevance to the sub-project/project
		distinguishing between small-scale and commercial activities. Requirements relating to primary suppliers, where a project is purchasing natural resource commodities, including food, timber and fiber.	prepared in addition to the ESMP.
ESS-7 Indigenous-Peoples	Ensure that the development process fosters full respect for affected parties' human rights, dignity, aspirations, identity, culture, and natural resource-based livelihoods. Promote sustainable development benefits and opportunities in a manner that is accessible, culturally appropriate and inclusive. Improve project design and promote local support by establishing and maintaining an ongoing relationship based on meaningful consultation with affected parties. Obtain the Free, Prior, and Informed Consent (FPIC) of affected parties in three circumstances. Recognize, respect and preserve the culture, knowledge, and practices of Indigenous Peoples, and to provide them with an opportunity to adapt to changing conditions in a manner and in a timeframe acceptable to them.	Applies when the Indigenous Peoples are present or have a collective attachment to the land, whether they are affected positively or negatively and regardless of economic, political or social vulnerability. The option to use different terminologies for groups that meet the criteria set out in the Standard. The use of national screening processes, providing these meet World Bank criteria and requirements. Coverage of forest dwellers, hunter gatherers, and pastoralists and other nomadic groups. Requirements for meaningful consultation tailored to affected parties and a grievance mechanism. Requirements for a process of free, prior and informed consent in three circumstances.	Not relevant to this WeCARE corridor and its sub-projects. Hence no differential provisions will be required to address the impacts on these households. However, if any SEC identified during project implementation, a separate SECDP will be prepared.
ESS-8 Cultural-Heritage	Protect cultural heritage from the adverse impacts of project activities and support its preservation. Address cultural heritage as an integral aspect of sustainable development. Promote meaningful consultation with stakeholders regarding cultural heritage. Promote the equitable sharing of benefits from the use of cultural heritage.	Requires a chance finds procedure to be established. Recognition of the need to ensure peoples' continued access to culturally important sites, as well as the need for confidentiality when revealing information about cultural heritage assets that would compromise or jeopardize their safety or integrity. Requirement for fair and equitable sharing of benefits from commercial use of cultural resources. Provisions of archaeological sites and material,	The alignment of the sub-project roads are yet to define. So, it is not sure to have any ancient monuments and/or archaeological site(s), protected, and religious structures/shrines of local importance. This ESMF has suggested a guideline to address the ESS8.

World Bank ESS Policy, Standards, Directive	Objectives	Requirements	Relevance & Extent of Relevance to the sub-project/project
		built heritage, natural features with cultural significance, and moveable cultural heritage.	
ESS-9 Financial-Intermediaries	Sets out how Financial Intermediaries (FI) will assess and manage environmental and social risks and impacts associated with the subprojects it finances. Promote good environmental and social management practices in the subprojects the FI finance. Promote good environmental and sound human resources management within the FI.	Financial Intermediaries (FIs) to have an Environmental and Social Management System (ESMS) - a system for identifying, assessing, managing, and monitoring the environmental and social risks and impacts of FI subprojects on an ongoing basis. FI to develop a categorization system for all subprojects; with special provisions for subprojects categorized as high or substantial risk. FI borrowers to conduct stakeholder engagement in a manner proportionate to the risks and impacts of the FI subprojects.	Not relevant as there is no financial intermediary involved.
ESS-10 Stakeholder-Engagement-and-Information-Disclosure	Establish a systematic approach to stakeholder engagement that helps Borrowers identify stakeholders and maintain a constructive relationship with them. Assess stakeholder interest and support for the project and enable stakeholders' views to be taken into account in project design. Promote and provide means for effective and inclusive engagement with project-affected parties throughout the project life-cycle. Ensure that appropriate project information is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner.	Requires stakeholder engagement throughout the project life cycle, and preparation and implementation of a Stakeholder Engagement Plan (SEP). Requires early identification of stakeholders, both project-affected parties and other interested parties, and clarification on how effective engagement takes place. Stakeholder engagement to be conducted in a manner proportionate to the nature, scale, risks and impacts of the project, and appropriate to stakeholders' interests. Specifies what is required for information disclosure and to achieve meaningful consultation.	**A separate SEP has been prepared to address ESS10.**
Environmental and Social Directive for Investment Project Financing	This Directive applies to the Bank and sets out the mandatory requirements for the implementation of the Environmental and Social Policy for Investment Project Financing (IPF).	It lays down the following responsibilities of the Bank to manage ES risks and impacts as below: a) undertake its own due diligence of the ES risks and impacts related to the Project; b) support the Borrower to engage in meaningful consultation with stakeholders, in particular affected communities, and in providing Project-based grievance mechanisms; c) assist the Borrower	Applies to Bank in addressing E&S aspects of this project

World Bank ESS Policy, Standards, Directive	Objectives	Requirements	Relevance & Extent of Relevance to the sub-project/project
		in identifying appropriate methods and tools to assess and manage the potential ES risks and impacts of the Project; d) agree with the Borrower on the conditions under which the Bank is prepared to provide support to the Project, as set out in the ESCP; and e) monitor the ES performance of a Project in accordance with the ESCP and the ESSs.	
Bank Directive Addressing Risks and Impacts on Disadvantaged or Vulnerable Individuals or Groups	This Directive establishes directions for Bank staff regarding due diligence obligations relating to the identification of, and mitigation of risks and impacts on, individuals or groups who, because of their particular circumstances, may be disadvantaged or vulnerable	It requires the Bank task team to support the borrower in establishing arrangements for the undertaking and preparation of the environmental and social assessment of the project as required by ESS1. It reviews the terms of reference for the environmental and social assessment to verify that (a) identifies (or requires the identification of) groups or individuals affected by the project that may be disadvantaged or vulnerable; and (b) requires an assessment of project risks and impacts, and identification of differentiated mitigation measures, as they pertain to the disadvantaged or vulnerable individuals or groups that are identified.	Applies to Bank in addressing E&S risks and impacts on disadvantaged and vulnerable persons or groups that are identified in this project corridor
World Bank's Guidance note on managing the risks of adverse impacts on communities from temporary project induced labor influx, 2016	The document provides guidelines to address issues and risks arising from influx of migrant labor leading to gender-based violence, forced labor etc.	Requires HPRIDC to prepare a labor influx management and GBV risk mitigation plan	Applicable to all sub-projects, as influx of migrant labor in construction works is a norm in this western part of the country. **A separate GBVF for LGED sub-projects.**

World Bank ESS Policy, Standards, Directive	Objectives	Requirements	Relevance & Extent of Relevance to the sub-project/project
Good Practice Note on Road Safety	Road Safety - To identify, evaluate and monitor the potential traffic and road safety risks to workers, affected communities and road users throughout the project life-cycle and, where appropriate, will develop measures and plans to address them. The Borrower will incorporate technically and financially feasible road safety measures into the project design to prevent and mitigate potential road safety risks to road users and affected communities".	Requirements on traffic and road safety, including road safety assessments and monitoring.	Yes
World Bank Groups' EHSGs, IFC, 2007			
General EHS Guidelines, April, 2007, IFC	The General EHS Guidelines contain information on cross-cutting environmental, health, and safety issues potentially applicable to all industry sectors	Requirements on environmental, health, and safety issues during construction of project road.	Yes
EHS Guidelines for Construction Materials Extraction, April, 2007, IFC	The EHS Guidelines contain the performance levels and measures that are considered to construction materials extraction activities such as aggregates, limestone, slates, sand, gravel, clay, gypsum, feldspar, silica sands, and quartzite	Requirements on the resource management of construction materials extraction activities such as aggregates, limestone, slates, sand, gravel, clay, gypsum, feldspar, silica sands, and quartzite	Yes

3.4 Gap Analysis of World Bank Requirements and National Laws

A gap analysis between WB's ESSs and GoB Regulations was conducted as part of the E&S capacity assessment of RHD and LGED. The results of the gap analysis indicated that the ES risk assessment and management system for development projects in Bangladesh is open-ended but just like other country's EIA systems, does not cover all the World Bank ESF's ES Standards. The ECA/ECR does not even define the scope of the EIA study (or the IEE), leaving it to the EIA prepare to determine the scope through initial assessment/screening. The coverage of the EIA study therefore would depend on the expertise of the EIA team or the DOE reviewers. There is no assurance that each ES Standard (1-8 and 10) are considered in the EIA study and the formulation of the ESMP. Although the EIA is heavy towards the environmental aspects, more and more social issues are incorporated in the assessment. Moreover, the practice under normal circumstances does not include labor management issues. Another critical gap pertains to lack of provisions for requiring the preparation of project-specific ES management plans. The eminent domain land acquisition system for example does not require the preparation of RAP. The projects are also not required to formulate their own Labor Management Procedures/Plans. Given the gaps, this ESMF will follow the

most stringent standards and requirement. Table 3.4 below has given an overview of the gaps between GoB laws and WB's ESSs and steps suggested to address those gaps.

Table 3.4: Gaps between GoB laws and World Bank ESSs (Ref. Table 3/Capacity Assessment Bangladesh/WB)

WB ESF Standard	Gaps	Gap Minimization
ESS1: Assessment and Management of Environmental and Social Impacts and Risks	(i) ESIA study screening and scoping do not guarantee coverage of all ESS standards in the assessment. (ii) The stakeholder engagement during the conduct of the ESIA is limited and the ESIA report is not disclosed. (iii) The ESIA system in Bangladesh does not require analysis of alternatives.	ESMF has suggested to follow the ESS1 requirements, given in the relevant sections of Environmental Management Procedures. In case, DoE rules/regulations do not cover the ESS requirements, relevant clauses should be added in the Financial Agreements and Project Appraisal Document to follow the more stringent safeguards requirements according to WB ESF.
ESS2: Labor and Working Conditions	(i) The Labor Act does not specifically require that development be assessed and reviewed in terms of labor and working conditions including OHS requirements before approval. (ii) The Labor Act does not require development projects to prepare Labor Management Plans/Procedure or OHS Plan.	A separate LMP has been prepared which will guide requirements for OHS plan. Guideline for developing Site Specific Management plans including OHS has been included in this ESMF.
ESS3: Resource Efficiency and Pollution Prevention and Management	Existing energy and water conservation policies, laws and regulations do not require development projects to assess resource efficiency issues and incorporate resource efficiency measures in their ES risk management plans.	ESMP to be developed for LGED components will address this issue, and incorporate mitigation measures for efficient use of water resources.
ESS4: Community Health and Safety	Covered under ESIA but the systems do not provide clear requirements for the development project and implementation. Health issues are within the purview of MHFW, but it is currently not involved in project preparation and oversight.	Guideline for Community Health Safety has been addressed in LMP and GBVF.
ESS5: Land Acquisition, Land Use Restriction and Involuntary Resettlement	Bangladesh: ARIPA (i) does not require the preparation of RAP;	A separate RAP has been prepared which on agreement will be followed as part of ESMF.

WB ESF Standard	Gaps	Gap Minimization
	(ii) does not provide compensation or assistance to those who do not have formal legal claim to the land; (iii) does not provide transitional allowances for restoration of livelihoods for informal settlers; (iv) relies on cash compensation, no developmental objectives; (v) no provision to give special attention to the vulnerable groups (vi) valuation of lost asset is not based on "replacement cost' standard	
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	No equivalent requirements on: (i) the application of hierarchy of measures; (ii) the preparation of Biodiversity Management Plan; (iii) differentiated measures on types of habitats; (iii) conduct of due diligence on primary suppliers.	Detail guideline has been given in ESMP preparation section. Besides, site specific management plans will be prepared for each sub-projects.
ESS7: Indigenous People	No equivalent requirements on: (i) coverage of IP impacts in the ESIA; (ii) special treatment or differentiated approach to IPs and vulnerable groups; (iii) conduct of FPIC; (iv) development of IP Plan.	No SEC has been identified during the ESMF preparation stage, so this ESS7 is not relevant to LGED components. However, if any SEC identified during construction period, standard SECDP will be prepared following the ESS7 requirements and subject to approval of WB.
ESS8: Cultural Heritage	No equivalent requirements on: (i) the application of hierarchy of measures; (ii) the development of Cultural Heritage Management Plan; (iii) the development and adoption of project-specific Change Find Procedures; and (iv) the engagement of cultural heritage experts.	Detail guideline has been given in the ESMP section. A separate RAP has also been prepared addressing this ESS8, cultural heritage.
ESS9: Financial Intermediaries	Not applicable to country system. Project proponents regardless of funders are subject to the same country laws.	N/A
ESS10: Stakeholder Engagement and Information Disclosure	The ECA/ECR does not specifically require consultation but the ESIA guidelines issued by DOE and other agencies recommends public consultations during scoping and the	A separate SEP has been prepared. Besides, guideline for stakeholders engagement has been provided in this ESMF will be followed.

WB ESF Standard	Gaps	Gap Minimization
	preparation of the ESIA. There is also no provision for any stakeholder engagements during project implementation	

3.5 Application of GoB Policies, Acts and Rules on WeCARE-LGED components and their Classification

The legislations relevant for environmental assessment for WeCARE-LGED components are the Environmental Conservation Act 1995 (ECA'95) and the Environmental Conservation Rules 1997 (ECR'97).

Article-12 of Environment Conservation Act ’1995, the key act governing environmental protection in Bangladesh, states that ‘No industrial unit or project shall be established or undertaken without obtaining, in the manner prescribed by rules, an Environmental Clearance Certificate from the Director General (of Department of Environment, DoE)’ and one of the key procedures to obtain the Environmental Clearance Certificate is to undertake an effective and expert environmental assessment. This assessment might simply be a screening and categorization or an IEE or a comprehensive EIA.

In order to set an illustrative directive for abiding by the act, Bangladesh Government through the Environmental Conservation Rules ’1997 and its subsequent amendments, as specified in rule 7(2), present a categorization of all the potential industrial interventions or projects into four distinct types- Green, Orange A, Orange B and Red, considering the site of the interventions and impact on the environment. The procedure and required documents for obtaining environmental clearance in favor of each category have also been presented by the DOE. As part of a government entity, LGED is obliged to abide by all these acts and rules, in addition of other GOB acts, rules or guidelines. Following Table 3.5 shows the list of conventional type of projects LGED mostly involved in and the corresponding categories set by the Department of Environment:

Table 3.5 LGED projects and those corresponding categories set by the DoE (ECA’95)

Type of projects or interventions	Environmental Category
Construction, re-construction and extension of road (feeder road, local road)	Orange –B
Construction, re-construction and extension of bridge (length below 100 meters)	Orange-B
Construction of multi-storied commercial and apartment building (N.B. LGED constructs school building, cyclone shelters, markets, local government office building, etc.)	Orange-B
Land filling by industrial, household and commercial wastes	Red
Construction/reconstruction/expansion of flood control embankment, polder, dike, etc.	Red
Construction/reconstruction/expansion of road (regional, national & international).	Red

Type of projects or interventions	Environmental Category
Construction/reconstruction/expansion of bridge (length 100 meter and above)	Red

Apart from the project types given above, LGED undertakes a huge rehabilitation works on roads and other infrastructures, construction of river ghats, rehabilitation of village ponds, tree plantation and so on, which are very unlikely to create any health or environmental hazards or pollution neither in construction nor operational phases, thus would be categorized as 'GREEN' and approach to DOE is made accordingly with those subprojects.

As per ECR'97, most the components/sub-components and associated activities are likely to fall ranging under Orange A, Orange B and Red Categories as has significant impact on the environment, likely to have negative environmental impacts on air, soil, water and natural setting such as water bodies, vegetation, wildlife and fishes, demands both IEE and EIA. Overall, the proposed project is targeting to intervene a wide range of environmental elements covering a vast area of rural environment, with rehabilitation/construction of higher quantity of small scale infrastructures and construction/ rehabilitation of rural roads **may fall under the schedule 'Orange-B and very few in Red Category' based on ECR '97 of DoE.** It is suggested that the project should conduct IEE for specified activities at the initial stage and based on IEE's recommendation, EIA should be carried out for that activities. However, according to the project planning, the activities those need EIA will be implemented at different periods and hence, multiple ESIAs will be required clustering the similar activities prior to the actual intervention start.

It is the responsibility of the LGED to conduct IEE and EIA of the project activities, the responsibility to review IEE and ESIA for the purpose of issuing Environmental Clearance Certificate rests on DoE. The Department of Environment (DoE), the technical arm of the Ministry of Environment and Forest (MoEFCC) is the regulatory body and the enforcement agency of all environmental related activities. Like all other projects, this project also needs to meet the requirement of the DoE. ***The procedures for "Orange B or Red" Category include submission of:***

- An Initial Environmental Examination (IEE), and
- An Environmental Impact Assessment (EIA), if prescribed by DoE, and
- An Environmental Management Plan (EMP)

Environment clearance has to be obtained by the respective implementing agency or project proponent (private sector) from Department of Environment (DoE). The environmental clearance procedure for Orange-B Category projects can be summarized as follows:

Application to DoE→Obtaining Site Clearance→Applying for Environmental Clearance→Obtaining Environmental Clearance→Clearance Subject to Annual Renewal.

Steps to be followed for obtaining Environmental Clearance Certificate (ECC) in connection with the construction/ reconstruction / re-excavation of canals from DoE are outlined in Figure 3.1. Public participation or consultation is not a condition in the ECR '97 and or IEE/EIA Guidelines, however, DoE prefers the proponent to engage in public participation and put conditions while providing site clearance or during the approval of the EIA ToR.

The proposed interventions of the WeCARE will comply with all the policy directives of the National Environmental Policy, 1992 emphasizing reducing probable environmental impacts. The WeCARE broadly contributes toward achieving the aims and objectives of the climate change adaptation strategies and will contribute towards achieving the objective of pillars of Bangladesh Climate Change Strategy & Action Plan, 2009, such as (i), (ii), (iii), (iv), and (vi). Most of the clauses of National Water Policy, 1999 will be applicable to the WeCARE and WeCARE interventions are so planned that they would abide all those clauses. The WeCARE is designed in accordance with the Strategy of National Land Use Policy, 2001 and will comply with the requirements.

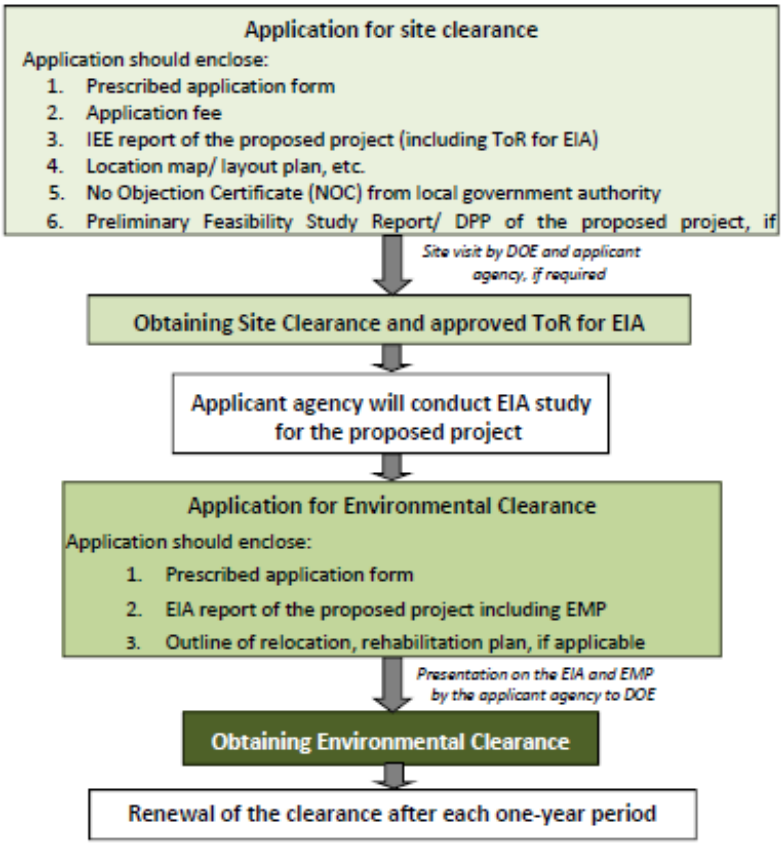


Figure 3.1: Process of obtaining Clearance certificate from DoE

The proposed WeCARE is expected to adhere to all sub-sectoral clusters of National Water Management Plan, 2001, expected to contribute to achieve the objectives of the National Environment Policy, 1992, National Environmental Management Action Plan, 1995, National Agriculture Policy, National Adaptation Programme of Actions, 2005, all existing Fisheries policies, strategies, Acts & Rules.

WeCARE's all intervention activities are planned and will be implemented abiding Bangladesh Wildlife (Protection and Preservation) Act 2012, Bangladesh Wildlife (Preservation) Order & and Act (1974), Forestry Acts & its amendments, Private Forest Act (PFA), 1959, Embankment and Drainage Act, 1952, Bangladesh Water Act, 2013, Bangladesh Labor Act, 2006, Bangladesh National Building Code, 2006.

3.6 Application of WB ESSs

Key environmental and social risks and impacts of the proposed program are anticipated to occur largely during the construction phase and within existing footprints. Key impacts include: (i) cutting of mature trees along the expanded ROW; (ii) health & safety of workers and communities within the corridor and along the transport routes of construction supplies, materials and equipment; (iii) exposure of population in urban and semi-urban centers along the ROW and transport routes to noise, vibrations, air pollution and safety risks; (iv) siltation and sedimentation of waterways close to the physical works; (v) significant land acquisition along the expanded ROW; (vi) physical displacement of houses and some mosques, temples, madrasah and graves; (vii) temporary economic displacement of some vendors and businesses along the ROW and in market areas where some rural roads will be constructed and/or rehabilitated; and, (viii) increased risk of GBV and road accidents.

All ESSs will be applicable in the WeCARE program, except the ESS 9: Financial Intermediaries, and WB's legal policies for Projects on International Waterways (OP 7.50); and Project Disputed Areas (OP 7.60). As of the preparation of the ESMF indigenous people were not found in the project area. However, if any SEC identified during project implementation, ESS7 will be applied to the sub-projects and separate SECDP will be prepared. If free and prior informed consent is required, it will also be obtained for the sub-projects.

Environmental and Social Risk Classification (ESRC) of the WeCARE program has been classified as 'High Risk'.. However, none of the LGED sub-projects are likely to be fallen at the 'High Risk', hence those may be classified as 'Substantial Risk'.

Chapter 4: Environmental and Social Baseline

WeCARE sub-project areas (Phase 1) falls across the ROW of the RHD corridor from Jhenaidah to Murali Mor via Jashore (48.7 km,). The area situated in the Ganges floodplain alluvium. Landscape involves low ridges and secluded wetlands at places. Distributors of the Ganges stream north-south during the monsoon and become dry during the dry season, and have a number of connecting water streams crisscrossed over the broader sub-projects area. The baseline condition of environmental and social context at the site of the sub-projects will serve as the basis for identifying, predicting and assessing impacts during the detail ESIA. Hence, a detail baseline survey will be carried out during the project preparation.

This baseline conditions has been generated based on the secondary information and reconnaissance field visit within the proximity of the LGED sub-projects area covering the administrative districts. In addition, information collected during the baseline survey by RHD ESIA team has also been used to enrich the chapter with authentic primary observation at this ESMF stage. Baseline condition has been described in light of the two broad categories viz. **Description of the Environmental Baseline** (includes both Physical Environment and Biological Environment) and **Description of the Social and Economic Baseline** (includes Socio-economic and Cultural Environment).

4.1 Description of the Environmental Baseline

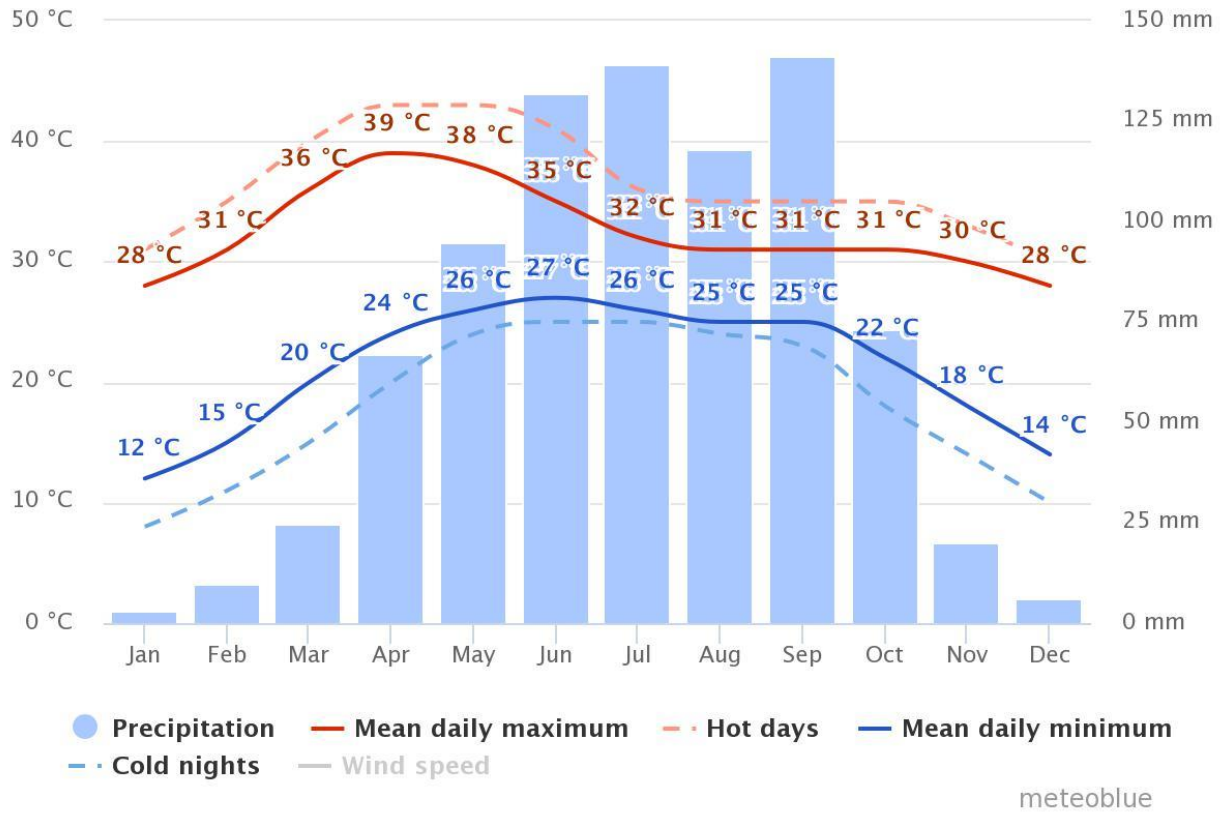
4.1.1 Physical Environment

Climate

The project area (Jashore to Jhenaidah road) corridor and its sub-projects is located in south-western zone. Though far less than half of Bangladesh is in the tropics, the influence of the Himalayan Mountain Range has created a tropical macroclimate over most of East Bengal's landmass. In the project location the extremes of the zones to the north are somewhat tempered in the south-west zone. Rainfall varies from 1,500 mm to 1,800 mm. The mean highest possible summer temperature is less than 35 ° C. Dew-fall is more severe than in the western zone. The climatic condition of the whole project area may be considered same as reported in Jashore and Jhenaidah district.

Temperature

Bangladesh has warm temperatures throughout the year, with relatively little variation from month to month. Figure 4.1 shows the mean daily maximum and minimum air temperature of 30 years of Jashore. As temperature record shows, April is the warmest month. Although in short spell, there exists a winter season in Bangladesh from November to February. The "mean daily maximum" (solid red line) shows the maximum temperature of an average day for every month. Likewise, "mean daily minimum" (solid blue line) shows the average minimum temperature. Hot days and cold nights (dashed red and blue lines) show the average of the hottest day and coldest night of each month of the last 30 years. Monthly precipitations above 150mm are mostly wet, below 30mm mostly dry.

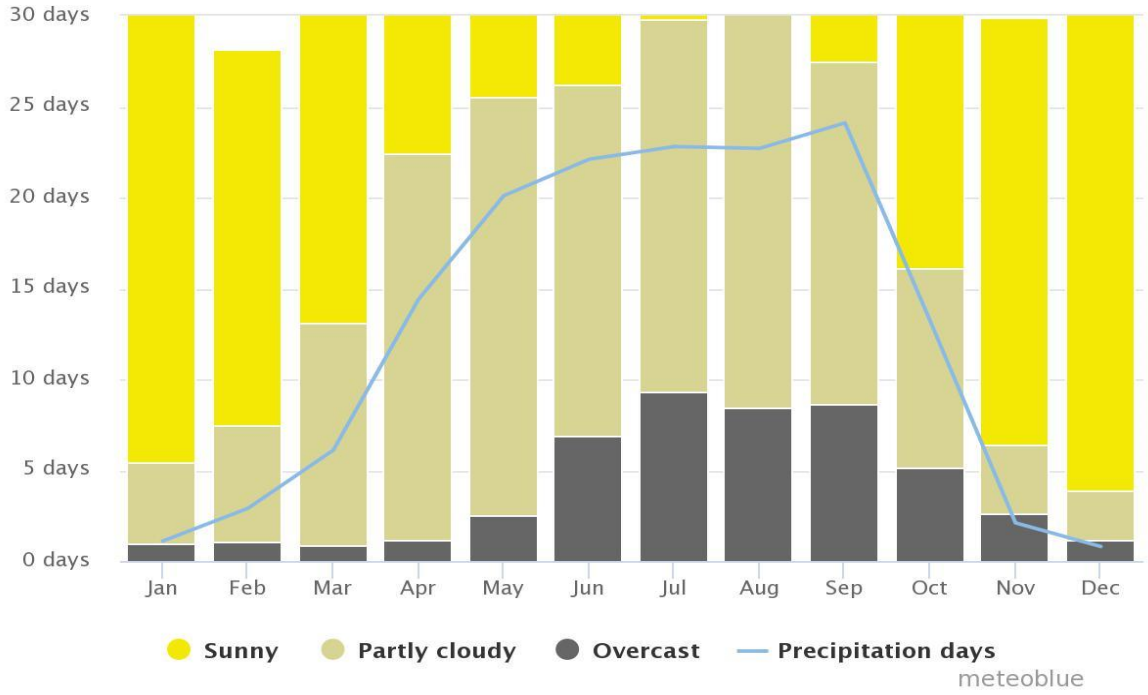


Source: Meteoblue

Figure 4.1: Temperature and Rainfall in Project Area

Rainfall

Heavy rainfall is characteristic of Bangladesh frequently causing flood across the country or at local scale. With the exception of the relatively dry western region of Rajshahi, where the annual rainfall is about 1,600 mm (63.0 in), most parts of the country receive at least 2,300 mm (90.6 in) of rainfall per year. About 80% of Bangladesh's rain falls during the monsoon season. Maximum rainfall occurs during May to September and the lowest rainfall occurs in November to February during winter season. Figure 4.2 shows the average monthly precipitation of 30 years of Jashore. The number of sunny, partly cloudy and nos. of rainy day is given in Figure 4.2. The graph shows the monthly number of sunny, partly cloudy, overcast and precipitation days. Days with less than 20% cloud cover are considered as sunny, with 20-80% cloud cover as partly cloudy and with more than 80% as overcast.



Source: Meteoblue

Figure 4.2: Number of Sunny, Rainfall and Cloud Coverage Days in Project Area

Wind Speed and Direction

Wind could be the biggest and most influential weather fact. So, it is extremely important to know the direction and velocity. The Wind Rose model is used to understand wind factors. The wind rose (Figure 4.3) provides an overview of prevailing wind conditions within the project area.

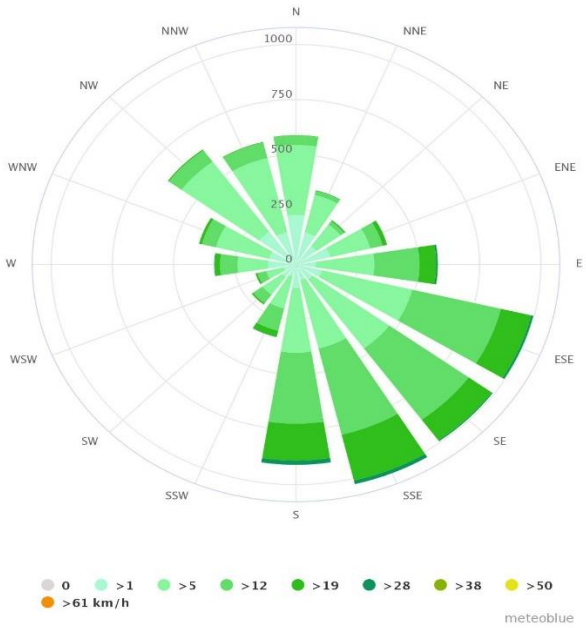


Figure 4.3: Wind rose Diagram in Project Area

The wind rose shows how many hours per year the wind blows from the indicated direction. From all the wind rose diagrams it can be said that the region is predominantly characterized by East, East-Southeast and South-East wind flow. The average wind speed ranges from 5 to 19 km/h during maximum period in a year.

Topography

Topography is the configuration of a land surface including its relief and contours, the distribution of mountains and valleys, the patterns of rivers, and all other features, natural and artificial, that produce the landscape. Although Bangladesh is a small country, it has considerable topographic diversity. It has three distinctive features: (i) a broad alluvial plain subject to frequent flooding, (ii) a slightly elevated relatively older plain, and (iii) a small hill region drained by flashy rivers. Nearly 12.5 percent area of Bangladesh in north northeast and south-southeast regions is hilly, 8.5 percent in the north centre and North West is flood free terrace land and 79 percent area is level land prone to seasonal inundation to variable depths. The general topography of the project area comprises floodplains in the majority of the road and terraces. The topography of the project area slopes from north to south with elevation ranged from 15 m a.m.s.l to 11 m a.m.s.l. The project is located on the flood plain of the Ganges River. Topographically the cluster of the project location is almost flat, with many depressions, natural khals, bounded by the rivers.

Physiographic Features

The project road alignment area lies mostly in the north-western and south-western part of the country and depends on the Ganges River for freshwater supply. The entire road alignment runs through Ganges Floodplain physiographic unit. The Mahananda floodplain comprises all irregular landscapes of mixed Tista and Ganges sediments. The cut-off parts of the Meghna floodplain have a smooth relief and predominantly silty soils, which are deeply flooded (by rainwater) in the monsoon season. The unit covers most of the districts of Rajshahi, most of the Jashore, Natore, Pabna, entire Kushtia, Rajbari, Faridpur, Meherpur, Chuadanga, Jhenaidah, Magura, parts of Manikganj, Narayanganj, Munshiganj, Shariatpur, Madaripur, Barisal, Gopalganj, Narail, Khulna, Bagerhat, Satkhira. This physiographic unit is almost triangular in shape and bounded by the Ganges tidal floodplain on the south. On its southern end it traps the Gopalganj-Khulna Beels (Banglapedia, 2015).

Geology and Soil

The geology of Bangladesh is distinguished by Pleistocene to Tertiary bedrocks in the eastern hilly area and by dense Holocene sediments in the rest of the country, according to GSB (1990). The general soil types of the project area predominantly include the Calcareous Alluvium, and Calcareous Dark Grey Floodplain soils and Calcareous Brown Floodplain soils.

Surface Water

The project area has several rivers namely Bhairab River, Chitra River, Begobati River. There are also significant numbers of beels and canals in and around the project locations. Besides, there are numerous numbers of ponds and ditches available in the project area. The wetland areas in Bangladesh and at project site have shrunk due to land use conflicts, watershed degradation in catchments within and beyond Bangladesh border and water diversion up stream. Pollution of open water bodies due to use of

pesticides in agricultural land, solid wastes and fish culture affected aquatic bio-diversity and wetland environment. The key issues related to surface water quality at the project area is the use of surface water for domestic, agricultural and industrial uses instead of exhausting the groundwater and disposal of domestic and municipal wastes in the water bodies.

Groundwater

The recharge of the aquifer in the project area is predominantly from deep percolation of rain and flood water. The actual recharge is apparently much less than its' potential, leading to substantial lowering of the seasonal water table. Reportedly, the ground water level in the Project area during the dry season has been going down every year. Possible causes of this decline are most likely the compound effects of reduced rainfall, pronounced droughts, increased temperature and reduced of river flow in the dry period.

Natural Hazards

Almost 10 percent of Bangladesh is susceptible to frequent seasonal flooding, while up to 24 per cent of the country is vulnerable to flooding during high rainfall years. Flooding at SWR and SCR is caused by local precipitation and cross-border run-off from other catchments. A few decades earlier, the Faridpur-Jhenaidah-Jashore-Khulna highway site was prone to a seasonal flood of 50-100 cm in the southeast, 0-50 cm in the northwest and a tidal flood in the southeast. Due to surface water management interventions by the Bangladesh Water Development Board (BWDB), the depth and duration of the floods have changed. The region is currently risk free of floods unless there is a breach of the flood protection bank. In Bangladesh, due to its unique geographic location, suffers from devastating tropical cyclones frequently. The funnel-shaped northern portion of the Bay of Bengal causes tidal when cyclones make landfall due to which thousands of people living in the coastal areas are affected. The project area does not fall under the risk zone of cyclone. However, due to its geographic location, flood occurs in the project area but not frequently.

Ambient Air Quality

There are several numbers of small and big brick kiln, one Rice mill and one sugar mill some frozen factory factories/industries located in the project. Moreover, there are significant numbers of brick kilns situated along the project corridor. Therefore, air pollution is localized and comparatively moderate at the project corridor. Air pollution in the project area is from road dust, black smoke from diesel engines, construction dust, windblown dust from agricultural lands, domestic heating and cooking, and transportations.

4.1.2 Biological Environment

Bio-ecological Zones

IUCN Bangladesh in 2002 classified the country into twenty-five bio-ecological zones. The project road alignment falls in the Teesta Floodplain, Major Rivers and Ganges Floodplain bio-ecological zone. The Ganges floodplain is basically consisted of the active floodplain of the Ganges river and adjoin meandering floodplains, and is mostly situated in the administrative districts of greater Jashore, Kushtia, Faridpur and Barishal. The adjoin meander floodplains mainly comprise a smooth landscape of ridges, basins and old channels. Noteworthy aspect here is the Gangetic alluvium a readily distinguishable from the old Brahmaputra, Jamuna and Meghna sediments by its high lime content. Besides, the relief is locally

irregular alongside the present and former river courses, especially in the west, comprising a readily alternating series of linear low ridges and depressions. The Ganges channel is constantly shifting within its active floodplain, ending and depositing large areas of new char lands in each flooding season, but it is less braided than that of the Brahmaputra-Jamuna Interestingly enough, both plants and animals move with the pattern of flooding (Brammer, 1996). The amphibian's species found in the zone include a few species of Toads, frogs and tree frogs. Among the mammalian fauna, fox, jackals, rats, mice squirrels, bats etc. are seen everywhere (GoB-IUCN, 1992).

Biodiversity

The project area consists of open agricultural lands, homesteads, and roadside vegetation. The open agriculture land dominates the area providing widespread habitat types for various species of flora and fauna under flooded and non-flooded conditions. The vegetation covers of agricultural lands are different crop species, weeds and other herbaceous plants species. The faunal species in the agriculture land and roadside bush ecosystems include common birds, amphibians, fish, snakes rodents and a few mammals. The homestead ecosystem provides mainly tree covered areas within rural Bangladesh including the project site. The homesteads are covered by fruit, timber, fuel wood, medicinal plants and various multipurpose tree species. The wildlife species in homestead ecosystem include the birds, amphibians, reptiles, rodents and mammals like mongoose, jackal, cats, monkey, etc. Based on the literature review and stakeholders consultations, the project area has no specific habitat for any the particular threatened species of flora and fauna, hence it is assumed that no such species will be specifically affected due to project implementation. However, ESIA suggested in the later chapters should assess presence of any of such ecologically important species following the criteria in ESS 6.

Sensitive Areas

There may be some sensitive areas (such as school, mosque, madrasah, monuments, factory, orphanage are present in the sub-project areas, which will be explored during detailed baseline survey. There are hardly any physical structures and/or cultural heritage sites primarily noticed. Socio-cultural structures such as mosque, cemetery, shrine, which will be affected by the project, maybe resettled or duly compensated in accordance with the regulations and RPF. Marjat Baor is an ecologically-critical area situated in the Kaliganj Upazila of Jhenaidah and Chaugacha Upazilla of Jessore, which is considered the only environmentally sensitive location within the project influenced area of LGED component. Marjot Baor, however, is more than 5-km away from Jashore-Jhenaidah Road that will be upgraded under the RHD Component and will not be affected by the upgradation works by RHD.. Marjat Baor (area 325 ha) is an oxbox lake, partially or no connection with the main river Bahirab is important habitat for many fishes and waterfowl. It supports livelihoods of many fishermen. However, if any of the LGED sub-projects impact on Marjat Baor, those projects will be ineligible under the project.

4.2 Description of the Social and Economic Condition

This section of social baseline condition mostly derived from the Socio-Economic Survey of the ADB in 2015 in the RHD part and also from the recently collected survey data to confirm socioeconomic profile of individuals residing in the project influence area by RHD ESIA Team in October 2019. The survey team interviewed 200 households (HHs) across Jashore and Jhenaidah. Out of the 200 surveyed HHs, 55 HHs are located in Jashore while 145 HHs are located in Jhenaidah. All of the survey respondents identified themselves as Bengali. 83.33 percent of the respondents indicated that they were Muslims, while 16.67

percent reported being Hindus. The following table summarizes the distribution of HH and members across the surveyed regions

Table 4.1: Basic HH features in the Surveyed Regions

Districts	(ADB 2015) Total PDP	Male (ADB 2015)	Female (ADB 2015)	HH	Individuals residing in the HH	Male	Female
Jashore	1066	1059	7	55	216	111	105
Jhenaidah	763	759	4	145	622	315	307
Total	1829	1818	11	200	838	426	412

Household Characteristics

Each HH in this sample is made up of five individuals, 5 and a total of 838 individuals currently reside in the 200 surveyed HH. Out of the 200 surveyed HH, 192 male, and 12 females have been identified as HH head. The average age of each HH is approximately 31.17 years, with maximum age being 95 years[6]. The following tables (Table 4.2 and Table 4.3) depicts the distribution of family size and age.

Table 4.2: Distribution of Family Size

Family Size (Number of Members)	Aggregate	Jashore	Jhenaidah	ADB 2015 Jashore	ADB 2015 Jhenaidah
Up to 3	63	22	41	301	386
4-6	121	28	93	424	650
>6	16	5	11	38	30

Table 4.3: Distribution of Age

Item	Mean[7]	0-45	46-60	>60 (Vulnerable category)	Min	Max
Aggregate	31.17	627	143	68	0	95
Jashore	31.66	159	39	18	0	85
Male	32.56	79	23	9	0	85
Female	30.40	80	16	9	1	80
Jhenaidah	31.25	468	104	50	0	95
Male	32.11	225	61	29	0	95
Female	29.96	243	43	21	0	85
ADB 2015 (female)						
Jashore		3	2	2		
Jhenaidah		3	0	1		

[5] 4.83 individuals to be precise

[6] If we take out zeros the mean age of the individuals in the surveyed HH is 31.77

Similar to other parts of Bangladesh, the data indicates that all the HH can be characterized as having a joint family structure. The table presents the distribution of relationship status across HHs. Married and unmarried account for 93.77 percent of individuals followed by widower category. However, the overall percentage of divorced/separated is the smallest among all the categories. The data exhibits that 24.1 percent of the individuals are household heads while 22.2 and 35.37 percent of individuals living in these HH are either husband/wife or son/daughter of the household head, respectively. Moreover, 5.25 percent of the individuals residing in the surveyed HH are father or mother of the HH head and another 5.61 percent of individuals in the surveyed households are son/daughter in law[8] of the household head. Grandson/granddaughter also comprised of less than 6 percent of the residents. 12 individuals suffer from disability in the surveyed areas whereas the ADB study reported 38 individuals with disability. Further, only 3.72 percent of members stayed away from home for at least 15 days for work last year.

Table 4.4: Marital Status of Individuals Living in HHs

Marital Status	Percentage
Married	70.67
Unmarried	23.32
Divorced	0.29
Widower	4.58
Separated	1.14

Education Status of HH

The table 4.5 indicates that dropping out and not getting admitted to a school is highly prevalent in the surveyed households. Less than 22 percent of individuals are regularly attending school. Moreover, 10.62 percentage of individuals have completed primary school, followed by 8.52 percent of individuals who received SSC course. Only a small percentage of individuals went on to study undergraduate and postgraduate degrees.128 individuals have not received any formal education out of which approximately 20 percent are women. Close 54 percent of individuals dropping out of school are women. In terms of the highest level of education obtained 11 percent of women has completed primary school. Both men and women have a high dropout rate and the dropout rate is fairly comparable (53.89 percent for female vs 55.67 percent for male).

Table 4.5: School Going Status

School going status	Percentage
Not Admitted	16.82
Admitted and regular	22.21
Drop Out	54.80
Finished studying	5.39

Participation in NGO and Government Safety Net Programs

This section discusses the participation of the surveyed households in NGO groups and government SafetyNet programs. 10.14 percent of the surveyed individuals are currently involved in NGO run microcredit programs, and approximately 86 percent have never been involved in NGO related activities. Out of the 85 individuals who participate in microcredit program 80 are women. Furthermore, only 46 individuals are currently a beneficiary of government safety net programs.

[8] ***Father/mother in law***

NGO participation	Percentage
Never been a member	86.04
Former Member	3.70
Involved in microcredit	10.14
Involved in Ultra-poor program	0.12

Government Safety Net Programs	Number
VGF	4
Allowance for the Elderly	9
Allowance for the disabled	8
Allowance for widow	1
others	38
No Allowance	777

House Ownership Status

The surveyed data exhibits a number of ownership or residing pattern. The most common form of ownership status is own built houses followed by inherited house. A small percentage of households also report buying their house.

Ownership Status	Percent
Rental	4
Built	60.5
Purchased	9.5
Inherited	21.5
Own but obtained from others	1.5
Sheltered in Others House	3.0

Business Activities, Savings and Loan

The following provides a summary of the professions of the HH members. In total, the following categories account for 87 percent of professions reported in the survey HH:

Profession	Percentage
Agriculture	9.99
Housewife	25.78
Student	17.83
NGO worker	2.69
Unemployed/retired/child	15.57
Rickshaw puller/truck/bus driver	5.26
Farmer	3.87
Labour	1.83
Raising Livestock	3.76

Community

Development projects can have an impact at the individual, household, locality, national and even international level impact. This section describes and presents evidence of the views of respondents on the potential ramifications of the project at the community level. The average number of years the respondent has been living in the community is 34 years approximately. Moreover, 25 percent of the respondents have been living in this area for less than 20 years, and 75 percent have been residing in this

community for more than 20 years. Approximately 11.06 percent of the respondents reported the presence of grave as opposed to 88.94 percent of respondents who didn't report the presence of graves. Out of those who reported graves 94.44 percent indicated that the presence of one grave and the rest reported the presence of two graves. Moreover, six respondents the existence of historical or cultural sites in the locality.

Poverty Status

Several indicators have been used to map the extent of poverty in the surveyed HH. Broadly the indicators can be categorized into the following categories (i) employment; (ii) education;(iii) HH facilities;(iv) food security;(v) Income and expenditure. In general, 28 percent of HH have at least one member who works as day labourers. Further 49 percent of 6-17-year old in the HH go to school. In terms of HH facilities, 99.50 percent of HH report having electricity in their HH. Half of the survey population do not have any livestock. The primary source of drinking water for the HH for over 92 percent of HH is tube wells and close to 97.5 percent of HH have a separate kitchen. Leaf, straw and dung were the main sources of fuel for the HH with only 7 percent of the HH reporting gas/biogas/LPG as their leading source of fuel. The main types of toilets used by the HH are Sanitary (68.5 percent) and Kutcha toilets (31 percent).

The average income of the surveyed HH is BDT 19,223, and the values for 25th and 75th percentile is BDT 10,050 and 21,500, respectively. However, there are 34 HH whose average monthly income is less than or equal to BDT5000 and thus they fall below the poverty line. Disaggregated the income figures in terms of men and women indicate that women on average earn marginally less that women (BDT 19510). The mean expenditure for an average HH is BDT 16,347. The 75th percentile value of expenditure is BDT 20,000 meaning that 75 percent of the surveyed HH spend less than BDT 20,000 and 25 percent spend more than BDT 20,000.

Health Facilities

Approximately 34 percent of the surveyed HH reported that either new centres were built, and existing ones upgraded. Moreover, an extremely high percentage (93 percent) of HH reported that health facilities were open every day. Around 70 percent of respondents indicated that the health centres neither have sufficient instruments nor have adequate medical personnel.

Gender-based Perception and Violence

A gender-based Perception and Violence section of the questionnaire aims to gauge the perception of the respondents on gender-related issues. In total, 16 questions were directed at the respondent concerning gender. This report summarizes eight questions from the gender survey. The in general results indicate a strong cultural bias towards women. The respondents strongly agree that a husband has the right scold or assault his wife. Close to 40 percent believes that women must be allowed to work and earn; however, contrarily almost half of the respondents disagree that women must be allowed to go out of home whenever she wants. Over a quarter of the respondents agrees or strongly agrees that the wife is bound to have a sexual relationship with the husband even if she does not want. On some indicators, however, there is robust support shown women's right to access justice if harassed and high levels f agreement is observed that none has the right to torture or harass women. The data presented thus far indicate that the surveyed household is significantly biased towards women.

Chapter 5: Potential Key Environmental and Social Impacts

5.1 Impact Assessment and Prediction (ESS 1-8)

This section discusses the guideline to predict the potential and mostly typical impacts on the key environmental and social parameters of the WeCARE area based on the overall baseline, assessment of project components/sub-components and the primary assessment of the activities.

5.1.1 Impact Assessment Methodology

The assessment of effects and identification of residual impacts takes account of any incorporated mitigation measures adopted due to any potential impact of Program activities, and will be largely dependent on the extent and duration of change, the number of people or size of the resource affected and their sensitivity to the change. Potential impacts can be both negative and positive (beneficial), and the methodology defined below will be applied to define both beneficial and adverse potential impacts.

The criteria for determining significance are generally specific for each environmental and social aspect but generally the magnitude of each potential impact is defined along with the sensitivity of the receptor. Generic criteria for defining magnitude and sensitivity used for the Program are summarized below:

Impact Magnitude

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

- Duration of the potential impact;
- Spatial extent of the potential impact;
- Reversibility;
- Likelihood; and
- Legal standards and established professional criteria.

The magnitude of potential impacts of the program shall be identified according to the categories outlined in Table 5.1.

Table 5.1: Parameters for Determining Magnitude

Parameter	Very High	High	Moderate	Low/Nil
Duration of potential impact	Long term (more than 20 years)	Medium Term Lifespan of the Program (5 to 10 years)	Less than program lifespan	Temporary with no detectable potential impact
Spatial extent of the potential impact	Widespread far beyond program boundaries	Beyond immediate Program components, site boundaries or local area	Within program boundary	Specific location within program component or site boundaries with no detectable potential impact

Parameter	Very High	High	Moderate	Low/Nil
Reversibility of potential impacts	Potential impact is effectively permanent, requiring considerable intervention to return to baseline	Potential impact requires a year or so with some interventions to return to baseline	Baseline returns Naturally or with limited intervention within a few months	Baseline remains constant
Legal standards and established professional criteria	Breaches national standards and or international guidelines/obligations	Complies with limits given in national standards but breaches international lender guidelines in one or more parameters	Meets minimum national standard limits or international guidelines	Not applicable
Likelihood of potential impacts occurring	Occurs under typical operating or construction conditions (Certain)	Occurs under worst case (negative impact) or best case (positive impact) operating conditions (Likely)	Occurs under abnormal, exceptional or emergency conditions (occasional)	Unlikely to occur

Sensitivity of Receptor

The sensitivity of a receptor shall be determined based on review of the population (including proximity/numbers/vulnerability) and presence of features on the site or the surrounding area. Criteria for determining receptor sensitivity of the program's potential impacts are outlined in Table 5.2.

Table 5.2: Criteria for Determining Sensitivity

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

Risk Classification (ESS1)

Environmental and social risk classification takes into account relevant potential risks and impacts, such as:

a. the type, location, sensitivity and scale of the Project including the physical considerations of the Project; type of infrastructure (e.g., dams and reservoirs, power plants, airports, major roads); volume of hazardous waste management and disposal;
b. the nature and magnitude of the potential ES risks and impacts, including impacts on greenfield sites; impacts on brownfield sites including (e.g., rehabilitation, maintenance or upgrading activities); the nature of the potential risks and impacts (e.g. whether they are irreversible, unprecedented or complex); resettlement activities; presence of Indigenous Peoples; and possible mitigation measures considering the mitigation hierarchy;
c. the capacity and commitment of the Borrower to manage such risks and impacts in a manner consistent with the ESSs, including the country's policy, legal and institutional framework; laws, regulations, rules and procedures applicable to the Project sector, including regional and local requirements; the technical and institutional capacity of the Borrower; the Borrower's track record of past Project implementation; and the financial and human resources available for management of the Project;
d. other areas of risk that may be relevant to the delivery of ES mitigation measures and outcomes, depending on the specific Project and the context in which it is being developed, including the nature of the mitigation and technology being proposed, considerations relating to domestic and/or regional stability, conflict or security.

High Risk:

A Project is classified as ***High Risk*** after considering, in an integrated manner, the risks and impacts of the Project, taking into account the following, as applicable.

a. The Project is likely to generate a wide range of significant adverse risks and impacts on human populations or the environment. This could be because of the complex nature of the Project, the scale (large to very large) or the sensitivity of the location(s) of the Project. This would take into account whether the potential risks and impacts associated with the Project have the majority or all of the following characteristics:
    i. long term, permanent and/or irreversible (e.g., loss of major natural habitat or conversion of wetland), and impossible to avoid entirely due to the nature of the Project;
    ii. high in magnitude and/or in spatial extent (the geographical area or size of the population likely to be affected is large to very large);
    iii. significant adverse cumulative impacts;
    iv. significant adverse transboundary impacts; and
    v. a high probability of serious adverse effects to human health and/or the environment (e.g., due to accidents, toxic waste disposal, etc.);
b. The area likely to be affected is of high value and sensitivity, for example sensitive and valuable ecosystems and habitats (legally protected and internationally recognized areas of high biodiversity value), lands or rights of Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities and other vulnerable minorities, intensive or complex involuntary resettlement or land acquisition, impacts on cultural heritage or densely populated urban areas.
c. Some of the significant adverse ES risk and impacts of the Project cannot be mitigated or specific mitigation measures require complex and/or unproven mitigation, compensatory measures or technology, or sophisticated social analysis and implementation.

d. There are significant concerns that the adverse social impacts of the Project, and the associated mitigation measures, may give rise to significant social conflict or harm or significant risks to human security.
e. There is a history of unrest in the area of the Project or the sector, and there may be significant concerns regarding the activities of security forces.
f. The Project is being developed in a legal or regulatory environment where there is significant uncertainty or conflict as to jurisdiction of competing agencies, or where the legislation or regulations do not adequately address the risks and impacts of complex Projects, or changes to applicable legislation are being made, or enforcement is weak.
g. The past experience of the Borrower and the implementing agencies in developing complex Projects is limited, their track record regarding ES issues would present significant challenges or concerns given the nature of the Project's potential risks and impacts.
h. There are significant concerns related to the capacity and commitment for, and track record of relevant Project parties, in relation to stakeholder engagement.
    i. There are a number of factors outside the control of the Project that could have a significant impact on the ES performance and outcomes of the Project.

Substantial Risk:

A Project is classified as ***Substantial Risk*** after considering, in an integrated manner, the risks and impacts of the Project, taking into account the following, as applicable.

a. the Project may not be as complex as High Risk Projects, its ES scale and impact may be smaller (large to medium) and the location may not be in such a highly sensitive area, and some risks and impacts may be significant. This would take into account whether the potential risks and impacts have the majority or all of the following characteristics:

    i. they are mostly temporary, predictable and/or reversible, and the nature of the Project does not preclude the possibility of avoiding or reversing them (although substantial investment and time may be required);
    ii. there are concerns that the adverse social impacts of the Project, and the associated mitigation measures, may give rise to a limited degree of social conflict, harm or risks to human security;
    iii. they are medium in magnitude and/or in spatial extent (the geographical area and size of the population likely to be affected are medium to large);
    iv. the potential for cumulative and/or transboundary impacts may exist, but they are less severe and more readily avoided or mitigated than for *High Risk* Projects; and
    v. there is medium to low probability of serious adverse effects to human health and/or the environment (e.g., due to accidents, toxic waste disposal, etc.), and there are known and reliable mechanisms available to prevent or minimize such incidents;
b. The effects of the Project on areas of high value or sensitivity are expected to be lower than High Risk Projects.
c. Mitigatory and/or compensatory measures may be designed more readily and be more reliable than those of *High Risk* Projects.
d. The Project is being developed in a legal or regulatory environment where there is uncertainty or conflict as to jurisdiction of competing agencies, or where the legislation or regulations do not adequately address the risks and impacts of complex Projects, or changes to applicable legislation are being made, or enforcement is weak.

e. The past experience of the Borrower and the implementing agencies in developing complex Projects is limited in some respects, and their track record regarding ES issues suggests some concerns which can be readily addressed through implementation support.
f. There are some concerns over capacity and experience in managing stakeholder engagement but these could be readily addressed through implementation support.

Moderate Risk:
A project is classified *as **Moderate Risk*** after considering, in an integrated manner, the risks and impacts of the Project, taking into account the following, as applicable:

a. the potential adverse risks and impacts on human populations and/or the environment are not likely to be significant. This is because the Project is not complex and/or large, does not involve activities that have a high potential for harming people or the environment, and is located away from environmentally or socially sensitive areas. As such, the potential risks and impacts and issues are likely to have the following characteristics:
    i. predictable and expected to be temporary and/or reversible;
    ii. low in magnitude;
    iii. site-specific, without likelihood of impacts beyond the actual footprint of the Project; and
    iv. low probability of serious adverse effects to human health and/or the environment (e.g., do not involve use or disposal of toxic materials, routine safety precautions are expected to be sufficient to prevent accidents, etc.).
b. The Project's risks and impacts can be easily mitigated in a predictable manner.

Low Risk:
A project is classified as ***Low Risk*** if its potential adverse risks to and impacts on human populations and/or the environment are likely to be minimal or negligible. These Projects, with few or no adverse risks and impacts and issues, do not require further ES assessment following the initial screening.

Assigning Significance (ESS1: High Risk, Substantial Risk, Moderate Risk and Low Risk)

Following the assessment of magnitude, the quality and sensitivity of the receiving environment receptor shall be determined and the significance of each potential impact established using the potential impact significance matrix shown in Table 5.3 and in accordance of the ESS1 standard of the potential **four risk categories viz. High, Substantial, Moderate and Low.**

Table 5.3: Assessment of Potential Impact Significance (ESS1)

Magnitude of Potential impact	Sensitivity of Receptors			
	Very Severe	Severe	Mild	Low / Negligible
Very High	High	High	Moderate	Negligible
High	High	High	Moderate	Negligible
Moderate	Moderate	Moderate	Negligible	Negligible
Low/Nil	Negligible	Negligible	Negligible	Negligible

5.2 Potential Key Environmental and Social Impacts of the sub-projects (ESS1-10)

The overall impact assessment of the proposed project activities of WeCARE sub-projects to be implemented reveals that most of the likely adverse impacts could be minimized or eliminated by adopting standard mitigation measures; there is also scope to enhance some of the beneficial impacts to be generated from the proposed project.

The potential impacts of the LGED sub-projects on the key environmental and social parameters that have been identified as part of the ESMF are listed in Table 5.5, which has also analyzed in according to the ESS1 risk categories based on the significance of each impacts following the criteria defined in Sub-section 5.1.1 and Tables 5.1 to 5.3. In the subsequent sections, these impacts are discussed and guidelines for mitigation included for the ESMF of the WeCARE LGED sub-projects.

Environmental and Social Risk Classification (ESRC) of the WeCARE program has been classified as 'High Risk'. But the sub-projects to be implemented by LGED under the WeCARE program have low to substantial risk, thus E&S risk is categorized as 'Substantial '. ESIA study should modify and further detail out this analysis as applicable, based on professional judgment and public consultations. A preliminary categorization of the project components/sub-components based on their environmental assessment requirement is given in Table 5.4 following the new WB ESF/10 ESSs. During subsequent phases, ESIA should also incorporate in their impact assessment a review of monitoring results from the Phase I, and adjust this preliminary impact identification as appropriate based on the findings.

Table 5.4: Categorization of sub-projects under LGED Component based on ESS requirements and Risk Classification

Components/Sub-components	Activities/Specific tasks	Potential Impacts	Risk Category	ESSs Requirement
Component 2: Upgrading secondary and tertiary roads and complementary logistics infrastructure and services	1. Construction/Rehabilitation of Core Road network not limited to district boundaries. These Core roads will include: • New Road Construction and Road widening and both will need land acquisition • Drainage structures • Road dividers • Landscaping • Planting tress where trees has been chopped down including barren road slope and shoulders 2. Construction of Village road connecting Core Road and the GCM and RM.	• Impact on land, structures and trees • Impact on air, water • Impact on biodiversity • Temporary economic displacement • Impact on livelihoods • Health and safety of the workers and communities • Impact on schools, health centre, community centre, local markets etc. • Impacts on women mobility	Substantial	IEE, ESIA, ESMP, LMP, SEP, GBVP, CHSP, OHSP, GRM, SEDP (if any)

Components/Sub-components	Activities/Specific tasks	Potential Impacts	Risk Category	ESSs Requirement
		• Increase of traffic • Risk of GBV and road accident • Increase of vulnerability • Risk of force eviction • Eviction of squatters • Climate risk		
	3. Development Market infrastructure and logistics, will include: • Different sheds • Multistory shopping at congested space • Waste water drainage • Cool room/storage where applicable • Community space • Green space • Toilets • Water supply and sewerage system • Internal road • Parking space • Solid waste management • Laboratory to check the formalin or other chemical • Other accessories needed 4. Construction of connecting road to local farms and collection centers, will include: • Small sheds may need land acquisition • Trucks/Lorry Parking Space • Open Storage space • Ramps • Toilets	• Impact on land • Impact on air, water • Loss of income and livelihood • Impact on the squatters • Increase of female entrepreneurship • Increase of female mobility • Increase of traffic • Human trafficking • Livelihood risk • Risk of force eviction • Increased risk of GBV	Substantial	IEE, ESIA, ESMP, LMP, SEP, OHSP, CHSP, GBVP, GRM, SEDP (if any)

Components/Sub-components	Activities/Specific tasks	Potential Impacts	Risk Category	ESSs Requirement
	• Water supply • Small laboratory to check the formalin or other chemical			
Component 3: Project Implementation Support and Sustainability	• Training and capacity building; • Strategic Environmental and Social Assessment (SESA); • Establishing a Fiduciary Advisory Panel; • Establishing a Transport Sector Integration and Coordination Platform (TSICP) and operationalizing the Road Maintenance Fund Board Act; and • Preparatory Activities for Subsequent Program Phases	• Low risks and impacts as activities are mainly technical support, studies, planning, etc.	Low	Screening, TORs, SESA, Training modules
Component 4: COVID-19 Relief and Recovery	• Labor intensive civil works; • Development of an Emergency Response Plan for COVID-19; and • Provision of necessary physical upgrades to transport agencies.	• Health & safety of laborers/workers • Unfair labor and working conditions • Potential exclusion of vulnerable and disadvantaged groups such as women, etc.	Moderate	Screening, Code of Conduct, OHS Plan, ESMP
Component 5: Contingent Emergency Response	• Eligible activities will be agreed between the GoB and the Bank at the time of activating this component	• There could be additional risks and impacts not included in this ESMF depending on the agreed eligible activities/ expenditures	Low - Moderate	This ESMF will be updated upon activation of the CER Component, including adding a positive list of

Components/Sub-components	Activities/Specific tasks	Potential Impacts	Risk Category	ESSs Requirement
				eligible activities/ expenditures at the time of activation, if the CER activities are not covered in the current ESMF

5.2.1 Potential Environmental and Social Impacts Related to Project Siting

Land Cover and Land Use Changes (ESS 1, 3, 6)

Construction of different infrastructures and Feeder roads widening may change existing land use and land cover at the local level. Although, most of the proposed infrastructures viz. market improvement are relatively small in nature, but their quantity is significantly high and will be spread over GCs, villages across the RoW.

Loss of natural vegetation and trees (ESS 6)

Siting of proposed infrastructures may require cutting of trees and removal of natural vegetation, which could be significant in number.

Loss of aquatic habitat (ESS 1, 3, 6)

Loss of aquatic habitats could be happened due to siting of proposed infrastructures, especially the construction of roads, culverts, bridges, sheds, markets, collection and landing sites, etc.

Drainage congestion and water logging (ESS 1, 3, 4)

Proposed road construction activities can cause drainage congestion and water logging at the local area, if not properly considered the local drainage of runoff.

Impacts on Vulnerable and disadvantage groups/communities/individuals (ESS1)

The WeCARE sub-projects have been designed to provide a holistic response to a set of dynamic issues that poor, vulnerable rural communities face. It aims to increase contribution to the economy, poverty reduction, and environmental sustainability. The project intends to improve management of targeted rural communities' access to livelihoods and economic activities using improved communication and connectivity towards RGCs, RMs, etc. Project's inclusive approach will result in benefits to households and individuals, especially the most disadvantaged like female-headed households, widows, the poorest, and the elderly peoples in the rural communities. The project will support the establishment and empowerment of community co-management associations to make decisions on market management and support the dependent poor to adopt supplementary and alternative economic activities. The project with its inclusive approach will target to reduce gender gaps those are the most glaring. Women and children will also benefit from the support for the consumption, production, processing, and marketing of

high nutrient- and protein-rich agro-products. The project will also promote more productive and better performing institutions and, over time, better services and effective and sustainable environmental management in the rural areas.

5.2.2 Potential Environmental and Social Impacts during Project Implementation

Air Pollution (ESS 1, 3, 4, 6)

Construction of roads and buildings, canal/pond excavation/re-excavation, culverts, bridges may generate emissions from excavation equipment, other machinery and construction traffic. The emissions may also include greenhouse gases (GHGs) from engine fuel combustion (exhaust emissions) and evaporation and leaks from vehicles (fugitive emissions) and emissions from asphalt works. The emissions from construction activities will deteriorate the ambient air quality and affect the public health. The dense populated areas and crowded market places (bazaars) are particularly vulnerable to these impacts. In addition, dust generated from the above activities will also have impacts on crops and livestock.

Noise Pollution (ESS 1, 3, 4)

Noise will be produced by vehicular movement, excavation machinery, concrete mixing, and other construction activities. The schools, religious places and crowded market areas are particularly vulnerable to the increased noise levels.

Water Pollution (ESS 1, 3, 4, 6)

During the construction phase activities ponds/canals/water streams-rivers can potentially cause some localized increase in water turbidity. However, this increase in turbidity is not likely to have any significant impact on overall water quality and the aquatic fauna primarily because of its temporary and localized nature. The construction camps and other site facilities such as offices and warehouses will also generate considerable quantities of waste effluents. Other possible causes of land or water contamination include accidental leakage or spillage of fuels, oils, and other chemicals, and waste effluents released from construction sites. These effluents can potentially contaminate the drinking water sources of the area and can also be harmful for the natural vegetation, cultivation fields, water bodies, and aquatic flora and fauna.

Impacts of Sand Extraction/River Dredging (ESS 1, 3, 4, 6)

Adverse impacts can arise from sand extraction and river dredging as part of sourcine of construction materials or as part of river/canal improvement works, if not very carefully planned and monitored. These types of activities in the water courses for the purpose of improved navigation or sand extraction for construction would have significant impacts on river ecology, changes in the river morphology including erosion of banks and loss of agricultural land, etc. due to changes in river hydrology.

Soil Contamination (ESS 1, 3, 4, 6)

Much like water pollution discussed above, soils in the construction area and nearby lands that are used for agriculture will be prone to pollution from the construction activities, construction yards, workers camps and other construction areas. Fuel and hazardous material storage sites and their handling are also the potential sources for soil and water pollution. Improper siting, storage and handling of fuels, lubricants, chemicals and hazardous materials, and potential spills from these will severely impact the soil and water quality and also cause safety and health hazards.

Generation of Solid Waste and Hazardous Waste (ESS 1, 3, 4, 6, 8)

Solid waste generated during the construction phase will include excess construction material such as sand and soil, faulty/damaged parts, metal scraps, cardboard boxes and containers, and cotton swaths from workshops, and domestic solid waste from construction offices and camps. In addition to the above,

small quantities of hazardous waste will also be generated mainly from the vehicle maintenance activities (liquid fuels; lubricants, hydraulic oils; chemicals, such as anti-freeze; contaminated soil; spillage control materials used to absorb oil and chemical spillages; machine/engine filter cartridges; oily rags, spent filters, contaminated soil, and others). It is imperative that such waste is responsibly disposed to avoid adverse environmental, human health and aesthetic impacts. Inappropriate disposal of these wastes can lead to soil and water contamination as well as health hazards for the local communities, livestock, and aquatic as well as terrestrial fauna.

Impacts on aquatic habitat (ESS 1, 3, 6)

Sand extraction from the ponds and other wetlands, re-excavation of canals, repairing of culverts-bridges and construction of roads, markets, collection centers may potentially disturb the aquatic habitat by increasing the water turbidity (siting impacts of these activities have already been discussed earlier in the Chapter). Some sensitive and important habitats exist in the WeCARE project area viz. Marzat Baor-ECA for wintering birds and some of the rivers for fish and dolphins. However, construction activities are not likely to have any direct impact on terrestrial or aquatic wildlife or their habitat since no sensitive ecological hot spots have been identified at the ESMF stage. However, any accidental leakage, spillage of contaminants, or dumping of solid waste/debris on land or in water bodies can potentially affect these habitats. These can cause injuries and even fatalities to these species.

Site Clearance and Restoration (ESS 1, 2, 4, 6)

After the completion of the construction activities, the left-over construction material, debris, spoils, scraps and other wastes from workshops, and camp sites can potentially create hindrance and encumbrance for the local communities in addition to blocking natural drainage and or irrigation channels.

Occupational Health (ESS 1, 2, 4)

Generally, the construction activities will involve small to medium scale excavation, operations of construction machinery and vehicular traffic. These activities may pose health hazards to the workers at site during use of hazardous substances, lifting and handling of heavy equipment, operating machinery and electrical equipment, working near water or at height and more. The program will need fuels, oils, and asphalt during the construction phase. Inappropriate handling or accidental spillage/leakage of these substances can potentially lead health hazards for the construction workers as well as the local community.

Occupational Safety (ESS 1, 2, 4)

Similar to the above, various construction activities may cause safety issues including physical injuries and accidental death. This may be increased in absence of proper training of unskilled workers to be engaged. Local community will also be vulnerable to accidental cases starting from minor injuries for careless disposal of hazardous materials to death for example movement of the heavy machineries and equipment.

Impact on labor, working Conditions and labor risks, including risks of child labor and forced labor, human trafficking (ESS 2)

The proposed sub-projects will entail employment of a significant number of labor especially during construction. The majority of labor will be locally hired, with the exception of skilled workers who may not be found in the program areas. For the rural roads, labor requirements are expected to be more modest and satisfied by local labor. However, potential risks engaged both for the hired skilled and non-skilled workers especially during construction period includes health hazards, poor living condition, accidental hazards risks, etc. Similarly, hiring labor from external area may cause social risk on the local communities includes gender based violence, price hiking of daily used products/foods, etc. Substantial risks are associated in-terms of hiring child labors or forced labors, and also due to border districts risk

associated to the labor trafficking is also very high. **However, a separate LMP has been prepared to minimize the risk associated with labor influx.**

Involuntary Resettlement Impacts (ESS 5)

The project will try to avoid take any private land through involuntary acquisition and avoid any physical displacement of residents for activities under the project. Most of the works will be carried out within the existing available lands. However, acquisition of private lands would be required in some areas, likelihood that infrastructures construction may involve displacement of formal and informal private users. For all these reasons, and largely as a precautionary measure, the project triggers ESS5 on involuntary resettlement. A Resettlement Policy Framework (RPF) is prepared by the LGED and approved by the World Bank. Site-specific RAPs will be developed - if and as necessary - during the project implementation. The RPF and any RAP will ensure the proper calculation and recording of the involuntary displacement impacts as well as identification of the affected people and mitigation of their loss and impacts. The purpose of the RPF and implementation of the RAPs is to ensure that there is no adverse effect on the living conditions and livelihoods of the affected people because of the project.

Impacts on Small Ethnic Communities (Impacts on Indigenous People) (ESS 7)

Small Ethnic Communities (SECs) if present in the project area can be characterized as indigenous peoples in view of their unique characteristics including language, culture, occupation, and traditions. However, the WeCARE LGED sub-projects area has got no such communities those required ESS7 to develop Small Ethnic Community Development Framework (SECDF) to guide community participation and benefit sharing inclusive of the SECs.

Impact on Cultural Heritage (ESS8)

There are some mosques, temples and graves along the proposed LGED sub-projects area, which may be affected by project works. If they are found by the ESIA to be affected, they will have to be relocated and will be included in the RAP prepared for the program. Chance Find Procedures will be included in the ESMP and chance find clause will be included in works contracts requiring contractors to stop construction, if cultural heritage are encountered during construction. LGED will also have to notify and closely coordinate with the relevant mandated country authority for the salvaging and restoration of such cultural heritage.

5.2.3 Environmental Impacts during Post Project operational Period

Potential Changes in Water Courses (Canal) (ESS 1, 3, 6)

The potential culverts-bridges will need excavation of canals/ditches/ponds/other water courses may include stabilization and deepening of the channel. These changes are mostly positive in nature, likely to take place over a long period of time and need to be regularly monitored. Re-excavation will only induce localized bed changes.

Loss of Ecological Connectivity (ESS 1, 6)

Construction of roads and other infrastructures may disconnect local wetland connectivity's that would have potential negative impact on fish and other aquatic species life-cycle. That would also have potential impact of other aquatic and terrestrial wildlife, demands detail baseline survey.

Loss of Vegetation (ESS1, 6)

Infrastructures those will be constructed under the proposed project would be the sites of human access, which may lead to loss of more vegetation (herbs, shrubs and trees) at the surroundings due to human footprint.

Generation of Solid Waste (ESS 1, 3, 4)

Solid waste will be generated from markets, landing sites, packaging units and also during regular operation and maintenance activities of the constructed infrastructures. Hazardous waste will also be generated from access road maintenance. This waste if not appropriately disposed has a potential to contaminate soil and water resources, thus negatively affecting communities as well as natural habitat.

Air Pollution (ESS 1, 3, 4)

Emissions from local road traffic along the markets, landing sites and other infrastructures may affect the ambient air quality. Road traffic will be increased due to construction of these infrastructures at the project area.

Noise Generation (ESS 1, 3, 4, 8)

During operation, noise levels along the access roads, markets, landing sites, depots, collection center and camp offices will be increased due to the higher traffic volume and mass people gathering. Traffic noise will be a significant nuisance to the sensitive receptors such as schools and religious places located vary close to the roads and also to the children and aged persons.

Water Pollution (ESS 1, 3, 6)

Generally paved road increases the amount of impermeable surface area, which increases the rate of surface water runoff. Increased storm water flow rates can lead to stream erosion and flooding downstream; cause soil erosion, channel modification and siltation of streams. During the operation phase, some localized increase in turbidity may take place during any maintenance works of the constructed sites. Similarly, the maintenance works can also generate a limited quantity of waste effluents.

Changes in Land Use Pattern (ESS 1, 3, 6)

Markets, landing sites, depots, roads, plantation (at suitable sites) may change local land use pattern upon getting popularity during the operation period, which will replace existing use such as agriculture and vegetation in terrestrial area and natural aquatic system and agro-ecosystem at the project area.

Impacts on local livelihoods (ESS 1, 2)

While effort will be exerted for livelihood improvement of the farmers and local dependent communities, yet some of the project activities may have reversible and mitigable impacts on them. The probable impacts on income and livelihoods are minor since project will try to avoid acquisition of land and involuntary displacement of people. However, temporary economic displacement of some vendors and businesses along the roads and in market areas where some rural roads and markets will be constructed and/or rehabilitated. If so, impacted persons will be compensated following the criteria RAP. The major aim is to improve livelihoods of the poor rural community of the WeCARE project area with the capacity to better manage local resources and expand their participation in more exclusive and sustainable development. The beneficiaries and their location will be selected by the LGED and the program will be designed and implemented by PMU.

Increased risk of road accidents (ESS1)

One of the key potential risks associated with the sub-projects rural roads is increased risk of road accidents due to higher traffic. However, substantial road safety measures and facilities will be installed under the WeCARE program to minimize the accidents.

Table 5.5: Summary of Potential Environmental and Social Impacts and their Significance (ESS Risk)

Potential Impacts	Duration of Impact	Spatial Extent	Reversible or not	Likelihood	Magnitude	Sensitivity	Significance Prior to Mitigation	Significance after Mitigation
Impacts related to project siting								
Land cover and land use changes	Long term	Local	No	Certain	Very High	Moderate	Substantial negative	Moderate negative
Loss of natural vegetation and trees/mangroves	Long term	Local	Yes	Certain	High	Moderate	Substantial negative	Moderate negative
Loss of aquatic habitat	Long term	Local	No	Likely	Moderate	Mild	Moderate negative	Negligible negative
Loss of terrestrial habitats	Long term	Local	No	Likely	High	Moderate	Substantial negative	Low negative
Drainage congestion and water logging	Long term	Local but beyond project foot print	Yes	Likely	High	Mild	Moderate negative	Low negative
Loss of agriculture land	Long term	Local	No	Likely	Moderate	Moderate	Moderate negative	Low negative
Impacts on Vulnerable and disadvantage	Long term	Local	No	Likely	Moderate	Moderate	Moderate negative	Low negative
Impacts during project implementation phase								
Air pollution	Short term	Local	Yes	Certain	High	Moderate	Substantial negative	Low negative
Noise	Short term	Local	Yes	Likely	High	Moderate	Substantial negative	Negligible negative

Potential Impacts	Duration of Impact	Spatial Extent	Reversible or not	Likelihood	Magnitude	Sensitivity	Significance Prior to Mitigation	Significance after Mitigation
Water pollution	Long term	Local but beyond project foot print	No	Certain	High	Moderate	Substantial negative	Low to moderate negative
Soil contamination	Short term	Local	Yes	Certain	High	Mild	Moderate negative	Low negative
Solid wastes and hazardous wastes	Short term	Local	Yes	Certain	High	Mild	Substantial negative	Low negative
Impacts on aquatic habitat (River, Canal, Beels, Floodplain, etc.)	Long term	Local but beyond project foot print	No	Certain	Moderate	Moderate	Substantial negative	Low negative
Site clearance and restoration	Short term	Local	Yes	Certain	Moderate	Mild	Moderate negative	Low negative
Occupational health and safety	Short term	Local	Yes	Certain	Moderate	Moderate	Moderate negative	Low to moderate negative
Labor Impacts and risks of child labor, forced labor, human trafficking	Short term	Local	Yes	Certain	Moderate	Moderate	Moderate negative	Low to moderate negative
Involuntary Resettlement	Short term	Local	Yes	Certain	Moderate	Moderate	Moderate negative	Low to moderate negative
Small Ethnic Communities	Short term	Local	Yes	Certain	Moderate	Moderate	Moderate negative	Low to moderate negative

Potential Impacts	Duration of Impact	Spatial Extent	Reversible or not	Likelihood	Magnitude	Sensitivity	Significance Prior to Mitigation	Significance after Mitigation
Impact on Cultural Heritage	Short term	Local	Yes	Certain	Moderate	Moderate	Moderate negative	Low to moderate negative
Impacts during post project operational period								
Changes in water courses	Long term	Local	No	Likely	Negligible	Moderate	Low negative	Low negative
Loss of ecological connectivity	Long term	Local	No	Certain	Moderate	Moderate	Moderate negative	Low negative
Impact on terrestrial habitat	Long term	Local	Yes	Likely	Moderate	Moderate	Moderate negative	Low negative
Loss of vegetation	Long term	Local	Yes	Likely	Moderate	Moderate	Moderate negative	Low negative
Generation of solid waste	Long term	Local	Yes	Certain	Moderate	Moderate	Moderate negative	Low negative
Air pollution	Long term	Local	Yes	Likely	Moderate	Mild	Moderate negative	Low negative
Noise generation	Long term	Local	Yes	Likely	Negligible	Mild	Moderate negative	Low negative
Water pollution	Long term	Local	No	Certain	Moderate	Moderate	Moderate negative	Low to moderate negative
Changes in land use pattern	Long term	Local	No	Certain	Moderate	Moderate	Moderate negative	Low negative
Impacts on local livelihoods	Long term	Local	No	Certain	Moderate	Moderate	Moderate negative	Low negative
Increased risk of road accidents	Long term	Local	No	Likely	Negligible	Moderate	Low negative	Low negative

Chapter 6: Environmental and Social Management Procedures

WeCARE sub-projects will use a structured approach to environmental and social management to allow the project development process following the newly developed 10 ESSs, follow the mitigation hierarchy of avoidance, minimization, mitigation and compensation/offset for negative impacts and enhancement of positive impacts where practically feasible. Following sections describe what needs to be done at each stage of the overall project life – sub-projects implementation, implementation of the project activities, and reporting on progress.

6.1 General Principle (ESS 1-10)

Due to the nature of some of the proposed sub-project activities under WeCARE program and potential environmental and social impacts, the project falls under 'Orange B or RED' category according to ECR, 1997 and LGED component also falls under "Substantial Risk Project' as per the World Bank ESS1, which requires proper IEE, ESIA and implementation of environmental and social management plan. Therefore, the ESMF is prepared based on the following principles that can lead the planning and implementation of the LGED's sub-project activities in Phase I of the WeCARE.

- The Project Director of LGED is responsible for the compliance with national policies, regulations and World Bank ESSs and Guidelines, as mentioned in this ESMF report. The ESMF will serve as the basis for ensuring the compliance for Phase I of WeCARE.
- LGED is responsible for obtaining environmental clearance from DoE, local government agencies and World Bank as required.
- IEE, ESIA and ESMP need to be prepared for activities as determined by DoE. In case, requirements of DoE ESIA guideline differ from those of WB ESF, the more stringent standards and requirements will apply.
- Planning and design of the any additional activities should ensure minimal cumulative impacts.
- Environmentally Sensitive areas, cultural sites, restricted or disputed lands should be taken care of with appropriate mitigation or compensation measures during implementation.
- Participation of stakeholders (especially local community) should be ensured by LGED in planning, implementation and monitoring of each sub-components and associated activities.
- LGED will ensure appropriate institutional set up for implementing environmental and social management plan and inter-agency coordination.
- Contractors to be engaged for market construction, road widening and fiber optic line installation under the program will ensure provision of First Aid Kit at camp site with proper drinking water and sanitation facilities. Worker's/crew's health and safety measures shall be ensured and use of personal protective equipment shall be at place.
- LGED will ensure safety provision has been provided for the resettlement sites (if any).
- LGED will undertake public disclosure about the project interventions and potential impacts.

6.2 Environmental and Social Assessment and Management Process (ESS 1)

- The environmental and social experts of the PIU/main consulting firm will perform the environmental and social screening. The relevant experts will start the task during the preparation stage of Phase I.
- A independent ESIA consulting firm will update the Baseline condition, IEE and the ToR for ESIA for Phase I of WeCARE.
- LGED will share the IEE report and the ESIA ToR with DoE for Clearance.
- LGED's ESIA consulting firm will conduct ESIAs in packages different activities those have similarity and likely to have same environmental and social impacts at different points of project length, hence multiple ESIAs should be carried out prior to the similar cluster activities.
- WeCARE-LGED-PIU will review and clear screening and environmental assessment reports made by Environmental consultant.
- LGED will conduct verification of some screening and assessment through field visit.
- Main consultant/PIU will ensure that environmental considerations are given sufficient attention, weight and influence over selection of construction sites, feeder roads, and improvement of infrastructures in both GCs and landing sites.
- Bid documents will be prepared by the PIU/main consultant, environmental and social consultants will make sure necessary environmental and social clauses are included in the bidding documents and ESMP implementation should be done by Contractors. DSM consultant will supervise ESMP implementation and safeguards compliance.
- WeCARE Program works will be supervised by PIU/main consultant and LGED.
- All the activities of WeCARE will follow existing Environmental Code of Practices (ECoP) prepared under ESMF.
- The project will ensure that environmental and social impact assessment addresses all potential environmental and social direct and indirect impacts of the project and program throughout its life: pre-project, during project and operation stages and mitigation measures have been taken for it. If any additional impacts are identified, ESIAs/ESMPs would be reviewed and updated.

6.2.1 Screening

Environmental and Social screening is essential to gather information on existing baseline status and to assess potential environmental impacts of the WeCARE-LGED activities. Screening identifies the consequence of the proposed project in broader sense based on similar project experiences, stakeholder's perceptions and expert judgment, without having very much detailed investigation. Critical issues are also identified through the screening which needs detailed investigation. Based on the extent of environmental and social impacts obtained from the screening, the decision for further environment and social impact assessment will be taken.

Screening is usually carried out with the help of simple matrix that includes a set of check list to identify the baseline status and proposed potential impacts of the project intervention. Based on an extensive literature review and expert consultation, a screening matrix should be developed for WeCARE –Phase I sub-projects, which will be attached to the Impact Assessment report for the WeCARE LGED sub-projects. Members of environmental assessment team will update and use this matrix for collecting information

through site visit, interview/ consultation with stakeholders, focus group discussion in the sub-project sites at the later stages.

The screening matrix will help to decide whether the project activities can be implemented or not, and the level of Impact Assessment required. During screening, if it is found that the project may create major irreversible damage or may violate an existing rules or regulations, the sub-components/activities under sub-projects will be rejected. For instance, any activities that may encroach into an ecologically critical area or a national/ global heritage site will be rejected. LGED must confirm the findings of the screening carried out by the consultants. Moreover, alternative project activities/methods and/or operation will be considered and the impacts will be assessed to make the sub-projects more environment friendly and socially acceptable. A sample screening form has been attached at Annex G, which will be further developed at the implementation stage.

Part of the screening process will also screen for any associated facilities[9] to the project. If any associated facility is identified, the requirements of this ESMF will apply to that facility.

6.3 Environmental and Social Impact Assessment

Initial Environmental Examination (IEE)

The IEE study will be conducted under LGED. However, according to the project planning, the activities those need IEE will be implemented at different periods and hence, multiple IEEs will be required clustering the similar activities prior to the actual intervention start. The purpose of the IEE is three folds:

(i) to obtain Clearance from DoE and obtaining decision from DoE whether the particular project activities need further assessment such as detail ESIA or not;
(ii) provide/finalize the ToR for the ESIA study, if required; and
(iii) continue consultations with project stakeholders.

The Process of IEE is briefly outlined below:

Analysis of the Project Components: All the components of the LGED, like construction works and resettlements, will be examined thoroughly which will in fact guide the development of checklist for reconnaissance survey.

Preparation of Checklist: A comprehensive checklist of potential environmental components likely to be impacted need to be prepared based on the guidelines of different agencies such as DoE and World Bank. Checklist for typical LGED sub-projects are furnished in the following **Annex C (Table A-D).**

Initial Screening/ Survey: Not all the parameters selected in previous step may be significant for the project; hence the first activity will be to shorten this list to concentrate on significant effects. Data should be collected from all possible secondary sources, if available, and conduct an environmental reconnaissance with the relevant checklist in hand to identify and delineate the significant effects of the project and eliminate the others from further considerations. Public consultation will play an important role in initial screening.

[9] **Associated facilities means facilities or activities that are not funded as part of the project and are: a) directly and significantly related to the project, b) carried out, or planned to be carried out, contemporaneously with the project; and c) necessary for the project to be viable and would not have been constructed, expanded or conducted if the project did not exist.**

Analysis of alternatives: Alternative site and technological design should be analyzed for the proposed project interventions considering environmental, social, and technological criteria.

Identification and Scaling of Impacts: All the potential short and long term environmental impacts should be identified. The impacts can be graded qualitatively (e.g. high, substantial, moderate, and low) in order to identify major impacts and relevant components. In addition, cumulative and residual impacts of the project interventions need to be clearly addressed.

Identification of Enhancement and Mitigating Measures: From literature survey and applying expert judgment and based on assessed impacts, a list of possible enhancement and mitigating measures for beneficial and adverse effects respectively should be prepared.

Preparation Environmental Management and Monitoring Plan: Environmental and Management Plan for the proposed project should be prepared mentioning the impact mitigation/ enhancement measures with institutional responsibilities. Also, environmental monitoring plan should be prepared that will include monitoring parameters, frequency, method and responsible agencies.

Recommendations on the need of ESIA study: The IEE study should recommend the activities and sub-projects as to whether a full-scale ESIA study is needed or not.

Preparation of ToR for ESIA: Based on the IEE findings, a detailed ToR for subsequent ESIA study should be prepared. The ToR will specially focus on the adverse impacts of high magnitude. Attention should also be given to cumulative and residual impacts. A tentative IEE report structure is suggested as follows in Table 6.1:

Table 6.1: Table of Contents of an IEE Report

Chapter	Sub-chapters required in IEE report
Chapter-1	Introduction
Chapter-2	Description of the project
Chapter-3	Description of the existing background environment in and around the project site (Generally this should cover an area of 1 km. Radius)
Chapter-4	Potential significant impacts (During Pre-construction, Construction and Operation Phases)
Chapter-5	Mitigative and abatement Measures
Chapter-6	Residual impacts if any (these may have to be studied at the detailed Assessment stage)
Chapter-7	Monitoring Program
Chapter-8	Summary and Conclusions

Source: ESIA guidelines for industries, 1997, DoE, Bangladesh

Environmental and Social Impact Assessment (ESIA)

The purpose of ESIA is to give the environment and people its due importance in the decision-making process by clearly evaluating the environmental and social consequences of the proposed study before action is taken. Early identification and characterization of critical environmental and social impacts allows the public and the government to form a view about the environmental viability and social acceptability of a proposed development project and what conditions should apply to mitigate or minimize those risks and impacts.

The ESIAs will utilize a well-planned and all-inclusive communication and consultation strategy and include a baseline survey covering the prevailing status of income, employment, education, age, skills and other socio-economic aspects along with cultural and community aspects in the areas. The assessment will feed into the individual Resettlement Plans prepared for each site and will be incorporated, along with consultation feedback from those identified in the PAP census and all other relevant stakeholders, in the development of mitigation measures, especially livelihood strategies.

LGED will undertake a survey for identification of the persons and their families likely to be affected by the project. Every survey shall contain the following information of, the project affected families:

- Members of families who are residing, practicing any trade, occupation or vocation in the project affected area;
- Project Affected Families who are likely to lose their immovable assets, commercial establishment, agricultural land, employment or are alienated wholly or substantially from the main source of their trade occupation or vocation.
- Families belonging to indigenous categories
- Vulnerable persons
- Families that are landless (not having homestead land, agriculture land or ether homestead or agriculture land) and are below poverty line, but residing in the affected area
- Losing access to private property or common property resources

LGED on completion of the assessment will disseminate the results among the affected community. Based on the assessment, project will prepare an action plan to mitigate or minimize the adverse impacts as identified during the survey. The draft mitigation plan in form of resettlement action plan (RAP) will be again disseminated among the affected individuals/ community. The feedback received from the affected groups will be incorporated to the extent possible before finalization of the RAPs.

When ESIA identifies small ethnic communities with distinct characteristics different with the mainstream population of the country, a special approach will be followed as per the Bank ESS7 on indigenous peoples, if any. A free, prior and informed consultation approach will be followed for meaningful consultation with the small ethnic communities and identification of their priorities for additional measures for maximizing project benefits to them. Measures will be taken to avoid any adverse social effected to these communities and a small ethnic community development plan (SECDP) will be prepared for following implementation of the project activities in areas inhabited by small ethnic communities.

Procedure of RAP has been discussed in the RPF and those for preparation of SECDP in the SECDF presented in stand-alone volumes. However, the WeCARE Phase I area has no such small ethnic community those required attention to develop SECDP/SECDF.

However, according to the project planning, the activities those need ESIA will be implemented at different periods and hence, multiple ESIAs would be required clustering the similar activities prior to the actual intervention start. In the preparation phase, the ESIA shall achieve the following objectives:

- To establish the environmental and social baseline in the study area, and to identify any significant environmental issue;
- To assess these impacts and provide for measures to address the adverse impacts by the provision of the requisite avoidance, mitigation and compensation measures;
- To integrate the environmental issues in the project planning and design;
- To develop appropriate management plans for implementing, monitoring and reporting of the environmental mitigation and enhancement measures suggested.

The impact assessment will be conducted using major stages as shown in the following diagram Figure 6.1:

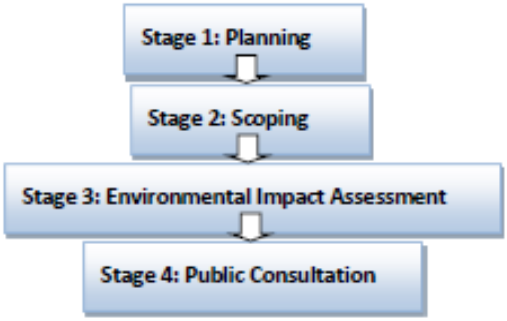


Figure 6.1: Diagram: Impact Assessment Process

Stage 1: Planning

Soon after the commencement of project, based on desk study, reconnaissance survey and experience of earlier similar projects, detailed methodology and schedule should be prepared for the effective and timely execution of the Environmental Assessment.

Desk Study: To collect the secondary information and checking out the methodology for carrying out the EA study and fixing of responsibilities of the EA team members for preparing a complete, addressing all issues, Environmental Management Plan.

Reconnaissance survey: To collect the first-hand information about the project area and develop a perspective of the entire team and revise the methodology and work program.

Experience from Earlier Project:

- **Focus on the main issues:** It is important that the EA does not try to cover too many topics in too much detail. Effective scoping can save both time and money by focusing the EA studies on the key issues.
- **EA requires the formation of a multidisciplinary team and the leadership of a strong EA coordinator.** The range of effects considered in the EA requires the skills of technical experts to

be employed on an assessment team, lead by a Team Leader. It is important to involve the right people (e.g., scientists, engineers, policymakers, government representatives, representatives of public interest groups and the local community) and agencies (e.g., the developer, the aid agency, regulatory authorities and politicians) in the EA process. Selection will be made through consultation at different stages.

- **Make maximum use of existing information before engaging expensive field studies.**
- **Determination of Project influence Area.** Based on reconnaissance survey and desk study and technical assessment, project influence area will be finalized.
- **Present clear and appropriate options for mitigation of impacts and for sound environmental management.** Mitigation is an integral part of impacts assessment. Application of appropriate mitigation can eliminate or reduce negative impacts, and improve the net overall environmental performance of a project. Hence public consent, practical viability will be considered in proposing the mitigation measures.
- **Post-ESIA audits and monitoring programs are essential to ensuring that EA commitments are carried out and that future EA improve.** An effective monitoring plan will be proposed in consultation with the client and the World Bank. Proper budgeting will be ensured for smooth functioning of monitoring plan proposed.

Stage 2: Scoping

Scoping will identify which of the activities has a potential to interact with the environment. Scoping will be conducted early in the EA process so that a focus on the priority issues (i.e. those that have the greatest potential to affect the natural and/or environment) can be established for the rest of the EA process. Necessary consultation with stakeholders will be made after scoping to incorporate any unattended issues. Key elements/inputs to the scoping exercise will be as follows:

- Gathering and reviewing existing environmental data like atmosphere, climate, topography, congestion area, alternative requirement, land use pattern, hydrology and drainage pattern, major River and waterways, religious, cultural and archaeological sites and sensitive areas.
- Identifying project stakeholders; including PAPs, Government and nongovernment agencies (utilities), Bangladesh Water Development Board, LGED, Agricultural Department, Department of Environment (DoE) etc.
- Assemble and review relevant legislative requirements, environmental standards and guidelines (national and international) associated with the proposed development as well as the World Bank‘s operational policies and standards.
- Gathering existing information sources and local knowledge;
- Informing stakeholders of the project and its objectives and get input on the EA;
- Identifying the key environmental concerns (community and scientific) related to a project and the relative importance of issues;
- Defining/preparing the EA work program, including a plan for public and stakeholder involvement;
- Carrying out monitoring of natural environment including air, water, soil, noise etc.
- Defining the range of project alternatives to be considered.

- Obtaining agreement/consensus on the methods and techniques to be used in EA studies and document preparation;
- Determining/freezing the spatial and temporal boundaries for the EA studies.

The following issues will be addressed through scoping, but will not be limited to.

- To improve the quality of EA information by focusing scientific efforts and EA analysis on truly significant issues;
- To ensure environmental concerns identified and incorporated early in the project planning process, at the same time as cost and design factors are considered;
- Reducing the likelihood of overlooking important environmental issues;
- Thinning the chance of prolonged delays and conflicts later in the EA process by engaging stakeholders in a constructive participatory process early in the EA process.

Stage 3: Environmental and Social Impact Assessment

After conducting IEE, if necessary, the ESIA should be conducted, as per ToR for ESIA suggested in IEE and cleared by DoE. The process of ESIA study is briefly described below:

- **Analysis of the Project Components:** All the components of the LGED and design specifications will be analyzed to get insight of the project activities. This will guide detail environmental baseline survey and particular investigations.
- **Data collection on Environmental and social baseline:** Environmental and social baseline condition of the proposed LGED will be collected through field visits, surveys and intensive consultation with local people. Intensive consultation with the stakeholders should be carried out for updating the baseline condition to obtain their perceptions on the proposed activities and the possible impacts.
- **Major Field investigations:** At this stage, detailed field survey (social and environmental) will be carried out to obtain information on the possible impact of the interventions on the environmental parameter.
- **Assessment of Impacts:** The impacts of the proposed LGED on the environmental and social components will be identified through consultation with experts and local community. The impacts will be analyzed and graded qualitatively (e.g. high, medium, low) in order to identify the major impacts. The future-without-project (FWOP) condition will be generated through trend analysis using information collected. The future-with-project (FWIP) condition will be predicted using professional judgment of the multi-disciplinary team members based on information collected. Difference between the two (FWIP-FWOP) conditions will be taken as impact of the proposed interventions. The impact will also be monitored. Moreover, cumulative impacts of the project inside or outside the project area will be analyzed. Possible mitigation measures for alternatives of the project will be identified in this stage. For true impacts prediction following questionnaire will be attempted to answer:
    - How will a particular project activity give rise to an impact?
    - How likely is it that an impact will occur?
    - What will be the consequence of each impact?
    - What will be the spatial and temporal extent of each impact?

- **Evaluation of impacts:** Impact assessed on different parameters will be evaluated for both positive (+) and negative (-) impacts considering magnitude, immediacy, reversibility and sustainability. Phase I ESIA studies will be used to understand the impact assessment for subsequent phases. Impacts can also be quantified for the infrastructure projects, a typical LGED project can evaluate the impact using the formula described below:

  - **Impact Assessment of Infrastructure Project**

  The Method of Assessment. A simple methodology has been developed for Environmental Evaluation System (EES) developed by Battelle Columbus Laboratories in the United States. In Bangladesh, in absence of a database it is only possible to estimate the potential environmental changes from the existing situation. In this method, the existing environmental conditions will be the reference level and the positive and negative changes in environmental conditions resulting from the proposed project will be evaluated. The environmental impact will be assessed by Environmental Impact Values (EIVs), which may be defined mathematically as follows:

$$EIV = \sum_{i=1}^{n} (V_i)(W_i)$$

where V_i is the relative change in the value of environmental quality of parameter i with respect to existing situation, W_i is the relative importance or weight of parameter i, and n is the total number of environmental parameters related to the project.

The computation of Environmental Impact Value (EIV) of a project needs determination of V_i, the value representing the magnitude of alteration of the environmental parameters, and W_i the value representing relative weight or importance of the respective parameters.

- **Magnitude of Environmental Alterations**

Change of environmental parameters should not be measured with respect to existing condition. The standard practice is to compare the future-with-project condition against the future-without-project condition, difference between these two are taken as the change in environmental parameters. The future-without-project condition should be generated through trend analysis using historical data collected during the establishment of baseline condition.

The beneficial and adverse changes in environmental parameters resulting from a project, usually expressed in qualitative terms have been plotted in a scale to quantify the environmental alterations. Figure 6.2 shows the correlation between qualitative statement and proposed quantitative values of environmental changes resulting from a project.

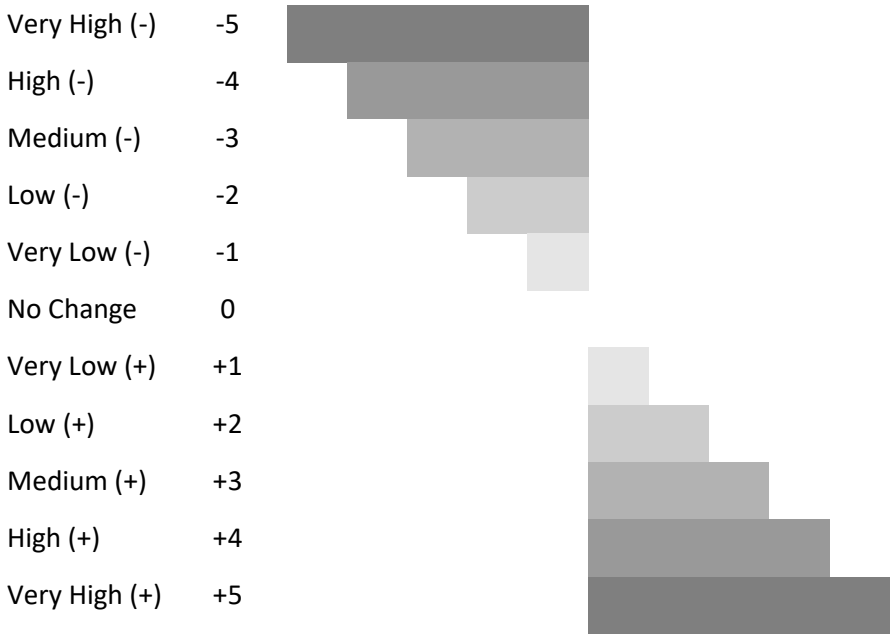


Figure 6.2 Quantification of Environmental Impact

Since the changes of environmental parameters are measured with respect to existing condition, no change has 0 values. Benefits or positive impacts are here graded from +1 to +5, and negative impacts scored from -1 to - 5. Impacts are assessed quantitatively wherever possible. For example, if a project will have a positive impact on agricultural productivity and the production will be increased by 50%, then a scoring of +3 is applied to agricultural productivity. Similarly if assessed that the fish production will be decreased by 30%, a negative scoring of –2 is applied for the respective fishery component. A value from the scale representing effect of the project on each parameter will be taken to compute the EIV of the project.

Where it is not possible to directly quantify the impact in terms of increase or decrease in production, or deterioration of water quality or degradation of environment, the impact has to be estimated. For the purpose of estimation, positive and negative impacts are divided into three different groups, as Low, Medium and High. A low numerical value ranges from 1 to 2, Medium 3 and High with a numerical value ranging from 4 to 5.

- **Relative Importance of Environmental Parameters**

All environmental parameters influenced by the project are not of equal importance or weight. The importance of a parameter varies from country to country depending on the environmental concerns of the country. Generally, in Bangladesh flood, employment, agriculture, fisheries etc. carry more importance than many others. The importance may also vary in different regions within the country. So the same parameter may have different values for subprojects located in different regions.

The parameters related to infrastructure projects have been given different values based on prevailing environmental concerns in Bangladesh and presented in Figure 6.3. These values have been arrived at after consideration of all probable impacts due to the project during its pre-construction, construction and post-construction stages. These are average values only based on normal conditions, which should be modified in case the projects are located in special locations having significant environmental concerns. The values representing importance or weight of the parameters can be used to compute the relative impacts of the parameters which are then summed up to obtain the total EIV of the project. In Table 6.2

a sample calculation for determination of EIV has been shown. Relative Importance Values of Environmental Parameters shown in Figure 6.3 has been assigned considering the infrastructure development projects. As in LGED, the major projects are related to infrastructure development only; the values shown in this Fig. can be utilized for all of them.

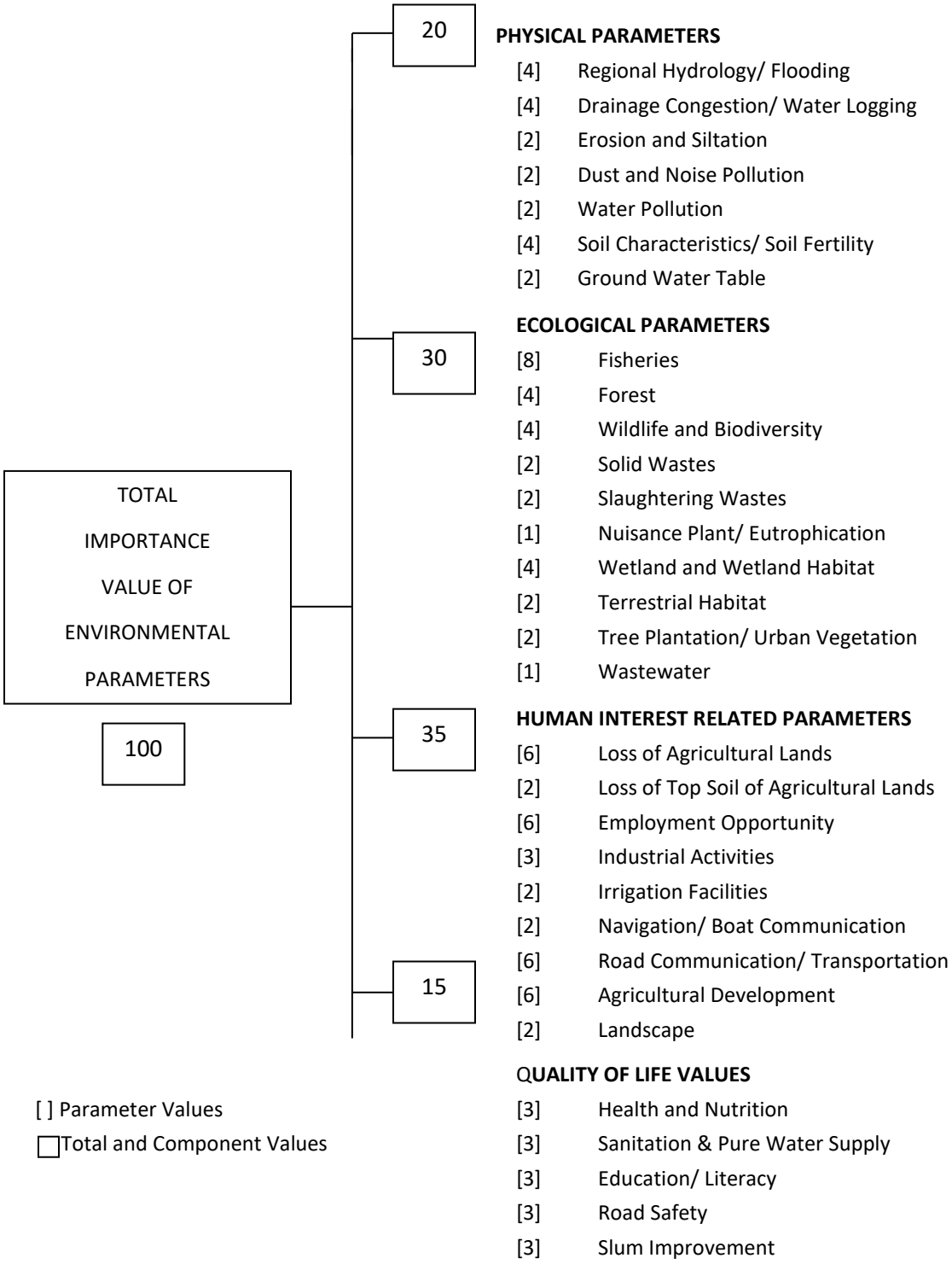


Figure 6.3 Typical Relative Importance Values of Environmental Parameters Related to Infrastructure Projects

A typical impact evaluation for LGED road project is furnished in the following Table 6.2:

Table 6.2: Impact Evaluation for ESIA of Road Projects

Name of the Project_____

ENVIRONMENTAL PARAMETERS	Relative Importance Value	Degree of Impact	Relative Impact		EIV
			Positive	Negative	
I. PHYSICAL					-10
Regional Hydrology/ Flooding	4	-1		-4	
Drainage Congestion/Water logging	4	-1		-4	
Erosion and Siltation	2	-1		-2	
Dust Pollution/Noise Pollution	2	0			
					-15
II. ECOLOGICAL					
Fisheries	8	-2		-16	
Forest	4	0			
Tree Plantation	2	+1	+2		
Wetland/ Wetland Habitat	4	0			
Nuisance Plant/Eutrophication	1	-1		-1	
					+4
III. HUMAN INTEREST					
Loss of Agricultural Lands	6	-3		-18	
Employment Opportunities	6	+3	+18		
Navigation and Boat Communication	2	-3		-6	
Industrial Activities	3	+2	+6		
Irrigation Facilities	2	+3	+6		
Landscape	2	-1		-2	
IV. QUALITY OF LIFE VALUES					+15
Health and Nutrition	3	+2	+6		
Sanitation and Water Supply	3	0			
Education/ Literacy	3	+2	+6		
Road Safety	3	-1		-3	
Slum Improvement	3	+2	+6		
Total Environmental Impact Value (EIV)			**50**	**-56**	**-6**

- **Preparation of Environmental and Social Management Plan:** The ESMP will be prepared suggesting mitigation measures for minimizing the effect of the negative impacts, compensation measures for the negative impacts which cannot be mitigated, enhancement measures for increasing the benefits of the positive impacts, emergency plan for taking care of natural hazards and accidental events. An environmental monitoring plan will also be suggested in the ESMP. Each component of the ESMP will be divided into pre-project, during project, post project and operation and maintenance phases. Responsibilities of the institutions in the implementation of the EMP will be suggested to ensure efficient utilization of all the parties involved. The ESMP should also include institutional capacity assessment and capacity building plan.

- **ESIA Report Preparation:** All the findings would be presented in the ESIA reports as per ToR. A preliminary ToR for ESIA is given in **Annex D**. **Annex E** is an indicative guideline on preparing ESIA report. A standalone guideline on ESMP is attached in **Annex F**.
- **Environmental Assessment and Management for Resettlement Sites:** Environmental assessment and management principles and requirements described above will be equally applicable for the construction of the resettlement sites (if any). A generic guideline to conduct ESIA of resettlement site/s will be prepared during the detail ESIA, if necessary.

Stage 4: Public Consultation (ESS 10)

"Public consultation" refers to the process by which the concerns of local affected persons and others who have plausible stake in the environmental impacts of the project or activity are ascertained with a view to taking into account all the material concerns in the project or activity design as appropriate. All Category 'High to Moderate Risk' projects or activities shall undertake public consultation. The key points of public consultation are given below:

Stakeholder Consultation at all Stages of Project

- Identification of primary and secondary stakeholders.
    - Primary stakeholders include people having direct impact.
    - Secondary stakeholders include village representatives, women's group, voluntary organizations NGOs, field level officers and staff, other government officials.
- Structured Consultation
    - Consultation at Village Level
    - Consultation at Upazila and District Level
    - Consultation at Divisional level
- Consultation at Village Level
    - Along with preliminary inventory and survey information dissemination will be done along the bank and the affected villages included in the project influence area canvassing about the project. Date and venue for detailed consultation will be fixed.
    - Pictorial method (Pamphlet) will be adopted to explain proposed improvements and possible environmental impact in the concerned villages.
    - Public consensus would try to be arrived for and mitigation proposed.
    - Public suggestion and graveness will be addressed at appropriate level.
- Consultation at Upazila and District Level
    - Consultation with officers of Department of Agricultural Extension, Forest Department, Soil Resources Department Institute, Department of Public Health Engineering (DPHE), etc.
    - Consultation with the local elected representatives and other stakeholders.
- Consultation at Divisional level
    - Consultation with, DoE office, Divisional Commissioner Office, etc. for good governance, and smooth implementation of project activities etc.

After completion of the public consultation, the environmental concerns will be addressed and appropriate changes will be made in the draft ESIA and ESMP. The final ESIA report, so prepared, shall be submitted by the client to the concerned authority for appraisal.

6.4 Specific Activities and Responsibilities in the Environmental and Social Assessment process

In Bangladesh, the environmental assessment procedure will pass through three major tiers in order to optimize the resources required for conduction of environmental assessment studies, these three tiers are: A) Screening, B) Initial Environmental Examination (IEE), and C) Detailed Environmental and Social Impact Assessment (ESIA). Screening decides whether the ESIA process should be applied to a development project and if it is required, its type, that is, IEE or ESIA. The major activities and the relevant responsibilities for each sub-activity are shown in Table 6.3:

Table 6.3: Major activities and responsibilities during different project stages for conducting infrastructure environmental and social assessment studies in Bangladesh

Project Stage	Steps/ Activities	Description	Responsibility
Step-1: Screening			
Planning and Pre-feasibility	Undertake Screening	Prepare a document containing environmental information covering potential environmental impacts, mitigation measures, evidence of public consultation etc. Take no further action for projects, which do not require environmental assessment.	LGED as proponent or qualified professionals/ Consultants
Step-2: Scoping to identify types of environmental and social assessment study			
Pre-feasibility/ planning	Scoping Exercise	Identify, by using checklists and based on preliminary field examination the necessity to conduct an IEE or an ESIA, as per ECR, 1997.	LGED as proponent assisted by qualified professionals/ Consultants
		Produce environment related document to competent authority for approval.	
Step-3: Terms of Reference (ToR) for environmental and social assessment study			
Pre-feasibility/ planning	Preparation of ToR	Define the main environmental concerns and issues related to any infrastructure program, which must be addressed by environmental assessment.	LGED assisted by professional environmental assessment team/consultant
	Approval of ToR	Review, comment and approve ToR	DoE, Bangladesh
Step-4: Preparatory work for environmental and social assessment study			

Project Stage	Steps/ Activities	Description	Responsibility
Pre-feasibility and planning	Assigning the work	Determine whether to conduct environment assessment using in-house staff or whether to outsource it.	LGED assisted by professional environmental assessment team/ consultant
	Environmental Assessment team formation	Form team as per approved ToR.	Environmental Assessment Team
	Prepare Work Plan	Establish a work plan that gives appropriate weight to all activities.	
Step-5: Undertake environmental and social assessment study			
Step-5.1: Desk Studies			
Planning and design	Secondary data	Collect and review relevant and appropriate published data, such as maps, reports etc.	Environmental Assessment Team
	Initiation, interaction and consultation	Discuss the proposed infrastructure and its potential environmental impacts with knowledgeable persons and concerned stakeholders.	
	Preparation of information summary	Draft a summary of the information that is relevant to the project and its possible environmental effects.	
	Methods and Techniques	Determine the methods by which the field work for Environmental Assessment will be conducted.	
	Work Plan	Revise the work plan on the basis of desk studies	
Step-5.2: Field Work			
Planning and design	Field equipment	Collect and arrange field equipment required for Environmental Assessment Studies	Environmental Assessment Team
	Field survey for collection of baseline information	Survey at project location, interaction with the local community and investigate the issues identified during desk study; collect baseline	

Project Stage	Steps/ Activities	Description	Responsibility
		(physical, biological and socioeconomic aspects) information	
Step-5.3: Data Analysis and Interpretation			
Planning and design	Impacts Identification	Establish what environmental impacts will be taken place as result of interaction of environmental settings and infrastructure construction, rehabilitation and maintenance activities.	Environmental Assessment Team
	Impact Prediction	Establish the extent of environmental consequences of the proposed infrastructure construction and operation.	
	Impact assessment	Judge whether the consequences are significant enough to require action to be taken.	
	Mitigation Measures	Design mitigation measures to avoid, reduce, minimize & compensate for adverse impacts & maximize beneficial impacts.	
	Environmental Management Plan	Prepare ESMP covering monitoring and project management to ensure the implementation of mitigation measures.	
	Stakeholder/ Public Consultation	Carry out at various stages in the assessment process to ensure quality, comprehensiveness and effectiveness and make sure that stakeholders' views are adequately addressed.	Environmental Assessment Team/LGED
Review and Approval	Review & approval of environmental assessment report	Check completeness, adequacy, credibility, facilitate the decision-making process; decide if project should proceed or if further alternatives must be examined.	LGED will review and forward to DoE for approval of IEE/ESIA report
		Approval of environmental assessment report or rejection.	DoE, Bangladesh

Project Stage	Steps/ Activities	Description	Responsibility
Design Implementation	Implementation of ESMP, Monitoring	Determines compliance with ESMP.	LGED or appointed professionals
Step-6: Undertake audit			
Environmental Audit	Auditing	Environmental audit: immediately after Construction and two years after project completion.	LGED or appointed professionals

Source: Modified from GoN, 2007

6.5 Integration of Environmental and Social Assessment with the Design

After conducting reconnaissance site inspection, a general design philosophy aimed at integration of the environmental and social concerns to the infrastructure designs may be developed. Some sample examples are given in following Tables 6.4-6.7.

Table 6.4 Road Improvement Design Philosophy to Integrate Environmental and Social Concerns

Sl. No.	Category of land use/ social and environmental features for the proposed road embankment	Recommended widening/ alignment option
1	Alignment on the Water Board's Flood Protection Embankment	Widen on the outer slope of the embankment. Embankment design to be checked to act it as a dam.
2	Both sides homestead, shop, commercial buildings etc. in a village section	Minimize social impacts by reducing standard road cross-section, say restricting top width to 5.7 m instead of 7.3 m (i.e. eliminating the provision of the soft shoulder; provide side drains.
3	One side homestead, shop, commercial buildings, etc. and other side paddy field in a village section	Eccentric widening towards paddy fields side
4	One side homestead, shop, commercial buildings etc. and other side pond in a village section	Eccentric widening based on local community consulting including PAPs
5	One side homestead, shop, commercial buildings etc. and other side avenue trees in a village section	Eccentric widening towards avenue tree side
6	One side paddy field and other side pond	Concentric/eccentric widening based on local community consultation; reduce embankment slope by providing piling, retaining walls towards pond side.

Sl. No.	Category of land use/ social and environmental features for the proposed road embankment	Recommended widening/ alignment option
7	Both sides pond/ ditch	Concentric widening; reduce embankment slope by providing piling, retaining walls, etc.
8	Both sides paddy fields	Concentric widening
9	Both sides avenue trees	Concentric/ eccentric widening based on local site conditions and community consultation
10	One side school/ mosque/ grave and other side paddy field/ pond/ ditch/ borrow pits	Widen opposite side of institutional/ religious/ cultural properties
11	One side school/ mosque/ grave and other side homestead	Concentric/eccentric widening based on local site condition and/or based on community consultation
12	One side avenue trees and other side paddy field	Eccentric widening to save avenue trees
13	One side avenue trees and other side pond	Concentric/eccentric widening based on local site condition and/or based on community consultation; reduce embankment slope by providing piling, retaining walls etc. towards pond side
14	One side avenue trees other side ditch / borrow pits	Save trees and widen ditch side
15	One side canal/ drainage channel and other side trees/ paddy fields/ pond/ ditch/ borrow pits	Protect canal/drainage channel by widening opposite side; in case of pond, reduce embankment slope by providing piling, retaining walls, etc.

Table 6.5 GCM/ Boat Landing Station (Ghat) Improvement Design Philosophy to Integrate Environmental and Social Concerns

Sl. No.	Category of land use/ social and environmental features for the proposed GCM/ Boat Landing Station (Ghat)	Recommended suggestions/ design modification options
1	Availability of suitable khas land inadequate	• Reduce size and number of infrastructures as per available space • Try to get back khas land occupied by people • Fill the low khas lands to make suitable for construction • Try to find some voluntary donor of land
2	Erosion prone area	• Arrange to protect the area by suitable protection measures

Sl. No.	Category of land use/ social and environmental features for the proposed GCM/ Boat Landing Station (Ghat)	Recommended suggestions/ design modification options
		• Avoid the site if it seems that the area would be eroded within next 20 years
3	No approach road available	• Keep special provision for construction of approach road to connect the GCM / Boat Landing Station (Ghat)
4	No suitable site for final disposal of wastewater	• Additional filter bed after the conventional septic tank and soak pit arrangement
5	Arsenic in shallow tube well	• Arrange for deep tube well if deeper layers yield safe water • Other alternatives for safe water supply as per local conditions

Table 6.6 Water Sector Projects Improvement Design Philosophy to Integrate Environmental and Social Concerns

Sl. No.	Category of land use/ social and environmental features for the proposed Embankments/ Structures/ Drains	Recommended suggestions/ design modification options
1	Homestead area on the alignment of embankment/ drain	• Re-alignment to avoid homestead areas
2	Structures to create obstruction for navigation/ boat communication	• Arrange for sufficient clearance to allow navigation/ boat communication
3	Subprojects in severely flood prone area	• Embankment heights to be increased with increased factor of safety • Structures to be designed with additional factor of safety

Table 6.7 Urban Sector Projects Improvement Design Philosophy to Integrate Environmental and Social Concerns

Sl. No.	Category of land use/ social and environmental features for the proposed Urban Roads/ Drains/ Structures	Recommended suggestions/ design modification options
1	Both sides homestead, shop, commercial etc. in a village section	• Minimize social impacts by reducing road cross-section

Sl. No.	Category of land use/ social and environmental features for the proposed Urban Roads/ Drains/ Structures	Recommended suggestions/ design modification options
2	One side homestead, shop, commercial buildings, etc. and other side pond in an urban section	• Eccentric widening based on local community consulting
3	One side homestead, shop, commercial buildings, etc. and other side avenue trees in a urban section	• Eccentric widening towards avenue tree side
4	Both sides pond/ ditch	• Concentric widening; reduce embankment slope by providing piling, retaining etc.
5	Both sides avenue trees	• Concentric/ eccentric widening based on local site conditions and community consultations
6	One side school/ mosque/ grave and other side pond/ ditch/ borrow pits	• Widen opposite side of institutional/ religious/ cultural properties
7	One side school/ mosque/ grave and other side homestead	• Concentric/ eccentric widening based on local site conditions and/ or based on community consultation
8	One side avenue trees and the other side pond.	• Concentric/ eccentric widening based on local site condition and/ or based on community consultation; reduce embankment slope by providing piling, retaining walls etc. towards pond side
9	One side avenue trees and other side ditch/ borrow pits	• Save trees and widen ditch side
10	One side canal/ drainage channel and other side trees/ paddy fields/ pond/ ditch/ borrow pits	• Protect canal/ drainage channel by widening opposite side; in case of pond, reduce embankment slope by providing piling, retaining walls, etc.

6.6 Environment and Social Management Plan (ESMP)

This section presents the outline environmental and social management plan (ESMP) of the WeCARE. A more detailed version of ESMP must be included in the IEE and if required in ESIA of the WeCARE Phase I; the ESIAs of subsequent phases will also include a similarly detailed version of ESMP.

6.6.1 Scope and Objectives of ESMP

The basic objective of the ESMP is to manage adverse impacts of program interventions in a way that minimizes the possible adverse impact on the environment and people of the program influence area. The specific objectives of the ESMP are to:

- Identify the mitigation measures during ESMF and ESIA; and facilitate implementation of those during implementation of WeCARE;

- Maximize and sustain potential program benefits and control negative impacts;
- Draw responsibilities for program proponent, contractors, consultants, and other members of the program team for the environmental and social management of the program;
- Define a monitoring mechanism and identify monitoring parameters in order to:
    - Ensure the complete implementation of all mitigation measures,
    - Ensure the effectiveness of the mitigation measures,
    - Maintain essential ecological process, preserving biodiversity and where possible restoring degraded natural resources and habitats; and
    - Assess environmental training requirements for different stakeholders at various levels.

The ESMP will be managed through a number of tasks and activities and site-specific management plans. One purpose of the ESMP is to record the procedure and methodology for management of mitigation identified for each negative impacts of the program. The management will clearly delineate the responsibility of various participants and stakeholders involved in planning, implementation and operation of the program.

6.6.2 Inclusion of Relevant Components of ESMP in Contract Documents

The specific IEE/ESIA should include a section on special environmental clauses (SECs) to be incorporated in the Tender Document under General/Particular Specification. These clauses are aimed at ensuring that the Contractor carries out his responsibility of implementing the environmental and social management plan (ESMP), monitoring plan as well as other environmental and safety measures. Such clauses may specify, for example, penalties for non-compliance as well as incentives to promote strong compliance. The various contractors must be made accountable to implement the plans and mitigation measures which pertain to them through contract documents and/or other agreements of the obligations and importance of the environmental and social components of the program. In addition, the specific ESIA will ask to submit an Environment Management Action Plan (EMAP) to encompass all of the detailed plans, measures and management systems they are required to develop and implement, to be based on the ESMF recommendation and ESIA findings, their work methodology, work force involvement, equipment's standard, and work scheduling.

6.6.3 Payment Milestones

Payments to contractors would be linked to environmental performance, measured by completion of the prescribed environmental and social mitigation measures. Contractors would be required to join forces with the executing agency, project management unit, supervising consultants and local population for the mitigation of adverse impacts of the program. For effective implementation of the proposed mitigation and monitoring measures they would attract trained and experienced environmental management staff.

6.6.4 Guideline to Incorporate Environmental Management in Bid Documents

The main consultants of LGED-PIU will be responsible to incorporate environmental management requirements in the bidding documents, with the assistance of the environmental consultants. The generic guidelines to incorporate environmental aspects in the bidding documents are listed below. These are examples only and shall be further elaborated and expanded upon based on the findings and recommendations of the phase-specific ESIAs.

- Prepare cost estimates, to be incorporated in Bid Documents.

- Contractor version of the Environmental Management Plan along with the ECoPs to be incorporated in the bid document's work requirements.
- Penalty clauses for not complying with ESMP requirements to be incorporated.
- Indicative penalty clauses are presented below (Addendum to Clause 17.2 Contractor's Care of the Works of FIDIC).
    - The contractor has to follow all traffic safety measures as defined in the technical specification. Damage shall be levied at the rate of up to BDT 10,000 per day per location for non–conformity of traffic safety measures as per the decision of the LGED officials.
    - The contractor has to follow all environmental mitigation and management measures as defined in the technical specification read along with the Environmental Management Plan for the specific WECARE activities. Damage shall be levied at the rate of up to BDT 10,000 per day per location for nonconformity of ESMP measures as per the decision of the LGED officials.
    - The contractor has to ensure that prior to every monsoon season, during the construction period; all the temporary and permanent cross drainage structures are free from debris as defined in the Technical Specifications read along with the ESMP. Damage shall be levied at the rate of BDT 3,000 per day per location for non-conformity as per the decision of the LGED officials.
    - The contractor has to ensure that a comprehensive Health and Safety program is in place for the duration of construction. Implementation of the program will include, among other aspects, ensuring that sufficient numbers and good quality Personnel Protective Equipment (PPE), should be provide to staff and labor all time as defined in the labor codes read along with the ESMP. Damage shall be levied at the rate of up to BDT 5,000 per day for non-conformity as per the decision of the LGED officials.
    - In addition, for any non-compliance causing damages or material harm to the natural environment, public or private property or resources, the contractor will be required to either remediate / rectify any such damages in a timeframe specified by and agreed with the engineer, or pay LGED for the cost (as assessed by LGED) of contracting a third party to carry out the remediation work.
    - Since many contractors do not have clear understanding the need of environmental management, some quote very low price for implementation of ESMP and eventually cannot implement ESMP as per specific requirement of ESMP and project design. To avoid this problem, fixed budget may be assigned for ESMP implementation. The contractors may need orientation on the requirement of the ESMP in the pre-bidding meeting.

6.6.5 Environmental Codes of Practice (ECoPs)

The environmental codes of practice (ECoPs) are generic, non-site-specific guidelines. The ECoPs consist of environmental management guidelines and practices to be followed by the contractors/ implementation organizations for sustainable management of all environmental issues. The contractor will be required to follow them and also use them to prepare site-specific management plans. Details of the ECoPs listed below are in Annex H.

- ECoP 1: Waste Management
- ECoP 2: Fuels and Hazardous Substances Management

- ECoP 3: Water Resources Management
- ECoP 4: Drainage Management
- ECoP 5: Soil Quality Management
- ECoP 6: Erosion and Sediment Control
- ECoP 7: Top Soil Management
- ECoP 8: Topography and Landscaping
- ECoP 9: Borrow Areas Management
- ECoP 10: Air Quality Management
- ECoP 11: Noise and Vibration Management
- ECoP 12: Protection of Flora
- ECoP 13: Protection of Fauna
- ECoP 14: Protection of Fisheries
- ECoP 15: Road Transport and Road Traffic Management
- ECoP 16: River Transport management
- ECoP 17: Construction Camp Management
- ECoP 18: Cultural and Religious Issues
- ECoP 19: Workers Health and Safety.

6.7 Mitigation Measures to Address Environmental Impacts

During Pre-construction Phase

Possible environmental impacts during pre-construction phase from construction, rehabilitation and maintenance activities should be identified beforehand. Detail activities need to be identified first and thereafter set of actions or interventions are to be demarcated and any possible effect due to an action is to be determined. Best practice mitigation or enhancement measures should be explored accordingly and deployed in the field. For giving an instance, a set of mitigation measures against possible environmental and social impacts due to an improvement project at its pre-construction phase is proposed in the following Table 6.8a.

Table 6.8a: Mitigation/Enhancement measures during pre-construction phase of construction, rehabilitation and maintenance of infrastructure project under LGED

Issues/ Activities	Potential Environmental Impacts	Proposed Mitigation Measures	Responsibility	
			Implementation	Supervision
Land Acquisition/ Requisition	• Encroachment of agricultural land, cultural sites, fish habitat etc. • Loss of agricultural production, fish resources; • Loss of income and livelihoods; • Social conflict.	– Avoid agricultural land, social/religious institutes, fish habitat during finalization of the alignment of the approach road and location of the bridge; – Prior to start construction adequate compensation should be given to the PAPs in-time according to RAP. – Adequate compensation should be given for standing crops; – Avoid agricultural land, if possible; – Create job opportunities for the PAPs.	LGED	LGED
Housing and Commercial Structures	• Loss of housing and commercial structures; • Dust pollution; • Loss of income and livelihoods.	– Avoid the housing and commercial structure during the finalization of the alignment and location of the bridge; – Proper compensation should be given before starting the removal or dismantling works; – Create job opportunities for the PAPs. – Water spraying on the bear surface or dust pollution source;	Contractor	LGED
Loss of vegetation/ tree	• Accident risk during removal of trees/vegetation's in the project sites; • Birds and others species can migrate from the trees/vegetation's; • Impacts on the local climatic condition.	– Prior to start construction, all vegetation should be removed from the proposed construction sites with the c consultation of the local relevant authorities; – Avoid disturbance and careful during construction vehicle and equipment movement; – Proper H&S measures (use of appropriate PPE such as hand gloves, safety shoes and helmet) for the workers should be taken during removal of trees, bushes & crops; – To mitigate the ecological impact, tree plantation plan can be considered in the design & accordingly tree plantation will be done in an appropriate location to be determined	Contractor	LGED

Issues/ Activities	Potential Environmental Impacts	Proposed Mitigation Measures	Responsibility	
			Implementation	Supervision
		by the LGED after consultation with the concerned authority; – Proper H&S measures (use of appropriate PPE such as hand gloves, safety shoes and helmet) for the workers should be taken during removal of trees, bushes & crops; – To mitigate the ecological impact, tree plantation plan can be considered in the design & accordingly tree plantation will be done in an appropriate location to be determined by the LGED after consultation with the concerned authority; – The engineer shall approved such felling; only when the proponent secures receive a "clearance" for such felling from the LGED, as applicable; – Tree felling, if unavoidable, shall be done only after compensatory plantation of at least two saplings for the every tree cut is done; – During the tree removal from the bridges and approaches construction sites diameter at best height (DBH) of the trees is 6 inch, only such trees should be considered by the contractor for compensation and plantation; – Tree plantation at the suitable locations after completion of the construction activities.		
Removal of Utilities	• Vulnerable for workers health and safety; • During movement of heavy Construction machineries equipment's can damage the utility services if not previously removed; • Due to carelessness or incautiousness death from	– Prior to start construction, the utility services (electrical cables, telephone line, water supply pipeline, gas supply pipeline and internet line) should be shifted with the consultation of the relevant organizations; – Inform the local community before starting removal or demolishing work; – Carefully remove the utilities that are connected to any structures;	Contractor	LGED

Issues/ Activities	Potential Environmental Impacts	Proposed Mitigation Measures	Responsibility	
			Implementation	Supervision
	sudden electric shocks may occur.	– Proper Health and safety measures for the workers should be taken during shifting of these lines to avoid any incidents.		
Dismantling	• Dust pollution in the construction site; • Health hazard for the workers and community during dismantling works; • Noise level increase; • Vibration effects on the structures on the surrounding of the project area; • Surface water contamination, blockage of navigation and drainage, impacts on aquatic animal; • A detail of the dismantling plan is also given in the Annex-C.	– Notify the adjacent community before starting the demolishing work; – During the removal or demolition of existing structures if required will be fully removed by the contractor; – Spraying of water in the dry land or from where there is a possibility to generate dust; – Banned fishing, swimming, boat movement activities in the construction sites, if applicable; – Proper H&S measures for the workers such as using of appropriate PPE (helmet, Earplug, musk, safety shoes, hand gloves etc.) should be taken to avoid any accidents; – Construct noise barrier around the dismantling site; – Stop the engine when it is not required; – Monitor Noise level as per DoE guidelines; – Impact wise mitigation measures are given.	Contractor	LGED
Archaeological/ Historical/ Social/ Cultural/ Religious Sites	• Encroachment of Archaeological/ Historical/ Social/ Cultural/ Religious sites • Air and dust pollution; • Noise level may create uncomfort for the local community; • Vibration can effect on social/ cultural/ religious site.	– Avoid Archaeological/Historical/Social/Cultural/ Religious sites during the site selection and improvement works; – Spraying water on the dry surface to reduce dust pollution; – Vehicles transporting construction material to be covered; – Create noise barrier around the construction sites; – Limit the speed of vehicles; – Stop the demolish work for short time like prayer time. – Realignment of bridge approach road (in case of bridge) if required.	Contractor	LGED

Issues/ Activities	Potential Environmental Impacts	Proposed Mitigation Measures	Responsibility	
			Implementation	Supervision
Setting up labour camps	• Land encroachment; • Solid and liquid waste from the labour camp	– Labour camp should be constructed at a distance from the water bodies; – Avoid productive land and away from the settlement during the selection of land for the setup of labour camp; – No solid and liquid waste discharge into the water bodies; – Instruct workers to maintain clean environment in the camps.	Contractor	LGED

Note: Mitigation/enhancement measures cost will be determined during the environmental assessment of individual project based on its location, types of construction, implementation schedule, cost for project implementation and requirement of mitigation/enhancement activities.

During Construction Phase

Possible environmental impacts during construction phase from the project construction, rehabilitation and maintenance activities should be identified. For mitigating the possible environmental impacts during construction phase mitigation measures are given in the following Table 6.8b.

Table 6.8b: Mitigation/Enhancement measures during Construction phase of project construction, rehabilitation and maintenance program under LGED

Issues/ Activities	Potential Environmental Impacts	Proposed Mitigate Measures	Responsibility	
			Implementation	Supervision
Air Pollution	• Construction vehicular traffic: Air quality can be affected by vehicle exhaust emissions and combustion of fuels • Construction equipment: Air quality can be adversely affected by emissions from construction machineries and combustion of fuels; • Construction activities: Dust generation from earth excavation, earth & sand stockpiles during dry period.	– Fit vehicles with appropriate exhaust systems and emission control devices; – Maintain vehicles and construction equipment in good working condition including regular servicing; – Operate the vehicles in a fuel efficient manner; – Impose speed limits at 30 km/hour on vehicle movement at the worksite to reduce dust emissions; – Control the movement of construction traffic in the access road; – Focus special attention on containing the emissions from generators; – Construction equipment causing excess pollution (e.g. visible smoke) will be banned from construction sites immediately prior to usage; – Water spray to the dry earth/material stockpiles, access roads and bare soils as and when required to minimize the potential for environmental nuisance due to dust; – Increase the watering frequency during periods of high risk (e.g. high winds); – Stored materials such as: excavated earth, dredged soil, gravel and sand shall be covered and confined to avoid their wind drifted; – Restore disturbed areas as soon as possible by vegetation;	Contractor	LGED

Issues/ Activities	Potential Environmental Impacts	Proposed Mitigate Measures	Responsibility	
			Implementation	Supervision
		– Establish adequate locations for storage, mixing and loading of construction materials, in a way that dust dispersion is prevented because of such operations; – The Air quality monitoring should be carried out by the contractor following the National Air Quality Standard (Schedule-2: Standards for Air Quality, ECR, 1997 and Amendment in 2005).		
Noise Pollution	• Construction vehicular traffic: Vibration and Noise quality will be deteriorated due to vehicular traffic. • Construction equipment: Noise and vibration will have an impact on adjacent surrounding residents. • Construction activity: Noise will have an impact on adjacent residents.	– Strict measures for noise pollution control need to be undertaken during construction activities; – Create noise barrier and consider the minimum noise levels at sensitive receptor sites (e.g. dense residential area, schools, mosques, health centers etc.); – Stone breaking machine should be confined within a temporary shed so that noise pollution could be kept minimum; – Protection devices (ear plugs or ear muffs) shall be provided to the workers operating in the vicinity of high noise generating machines during construction; – Construction equipment and vehicles shall be fitted with silencers and maintained properly; – Instruction to the drivers to avoid unnecessary horn; – The Noise level monitoring should be carried out by the contractor following the National Noise Quality Standard (Schedule-4: Standards for Sound, ECR, 1997 and Noise Pollution (control) rules 2006). – Vibration monitoring should be carried out by the contractor.	Contractor	LGED
Ground Water Pollution	• Contamination of groundwater due to Pollution lack of septic tanks or mobile toilets;	– The contractor will make arrangement for water required for construction in such a way that the water availability and supply to nearby communities remain unaffected;	Contractor	LGED

Issues/ Activities	Potential Environmental Impacts	Proposed Mitigate Measures	Responsibility	
			Implementation	Supervision
	• Accidental spillage of hazardous liquid from the construction camps.	– Handling and storage of the potential contaminants has to be organized under strict condition to avoid water pollution during construction; – Handling of hazardous liquid should be done carefully by the designated experienced person; – Handling and storage of the potential contaminants should be done by the experienced workers. Proper monitoring should be done by the experienced person; – The Ground water quality monitoring should be carried out by the contractor following the National Water Quality Standard (Schedule-3: Standards for Water, ECR, 1997).		
Surface Water Pollution	• Construction & general wastes from the construction sites; • Oil spill from the construction vehicles and construction camp can effect on fishes and aquatic wildlife (such as snakes, frogs etc.)	– Contractor should prepare Waste Management Plan and follow it properly during the construction period; – Any wastes should not be throwing into the river/khal/canal other than dump into the designated waste dumping area; – Store the oil and petroleum product in a separate location cover by a concrete structures; – Handling of hazardous liquid should be done carefully by the designated experienced person; – Monitor the surface water by testing in designated laboratory should be done by the Contractor following the National Water Quality Standard (Schedule-3: Standards for Water, ECR, 1997).	Contractor	LGED
Land/ Soil Pollution	• Decrease the production capacity of agricultural land; • Land or soil erosion from water or wind; • Sediment pollution and increase the turbidity;	– Avoid the productive land, agricultural land, archaeological sites, protected area, forest area, natural habitat etc.; – Land/soil quality should be ensured by the contractor to fill the abutment area and approach road; – Soil from fallow land should be used in earthwork in approach road;	Contractor	LGED

Issues/ Activities	Potential Environmental Impacts	Proposed Mitigate Measures	Responsibility	
			Implementation	Supervision
	• Reduction the microorganism.	– Re-vegetation the exposed area as early as possible to reduce the soil erosion; – Create barrier for reducing the sedimentation into the water bodies; – The Land or soil quality test should be carried out by the contractor.		
Waste (Solid, Liquid and Hazardous) Pollution Organic waste: remaining foods, leafs, papers, straw, fruit cover etc. Inorganic waste: Polythene, Glasses, Synthetic paper, plastic etc. Hazardous waste: Paint, fuel, chemicals, oil, petroleum	• Improper storage and handling of construction & general liquid waste such as fuels, lubricants, chemicals and hazardous liquid onsite, and potential spills from these liquid materials may harm the environment and health of construction workers. • Improper storage and handling of construction & general solid wastes.	– The contractor will minimize the generation of sediment, oil and grease, excess nutrients, organic matter, litter, debris and any form of waste (particularly petroleum and chemical wastes); – Any wastes should not be throwing into the river/khal/canal other than dump in to the designated waste dumping area; – Handling of hazardous liquid should be done carefully by the designated experienced person; – Organic waste should be managed by composting method. A concrete chamber with 3 rooms is needed to be provided. In one room organic waste should be dumped and another room inorganic waste will be dumped. When the room will be filled then covered by earth. Then dump to the third room. After 6 month organic waste will be converted into fertilizer and will be used by the farmers; – Inorganic waste should be given to the authorized vendor for free of cost for recycling; – Accidental spillage of hazardous waste should be managed by spreading wood powder on the surface of the oil and this powder mixed with oil must store in a designated concrete room; – Provide appropriate PPE to the construction personnel for handle construction materials; – Make sure all containers, drums and tanks that are used for storage are in good condition;	Contractor	LGED

Issues/ Activities	Potential Environmental Impacts	Proposed Mitigate Measures	Responsibility	
			Implementation	Supervision
products, bitumen etc.		– Take all precautionary measures when handling and storing fuels and lubricants, avoiding environmental pollution; – Waste water monitoring should be carried out by the contractor, following the national standard (Schedule-10: Standard for waste from Industrial units or Projects waste).		
Disturbance of Boat Communication	• Temporary disturbance from construction activities on the water bodies.	– Inform local community about the temporary disturbance during construction, rehabilitation and maintenance activities; – Restrict the boat movement during construction and dismantling work ongoing; – Carefully remove all the debris and construction wastes from the project sites; – Preference of working schedule will be given during winter/dry season; – Work should be continued only in day time.	Contractor	LGED
Hydrological Regime	• Drainage congestion and flood at the site; • Erosion and siltation at the site.	– A detailed hydrological and morphological study of the site (in case of bridge or other water related structures) should be conducted; – Proper design and construction accordingly to accommodate design flows; – Provision of sufficient sizes of drains to take design flows; – Wastes should not be disposed near any water body. All waste depending on its characteristics, should be disposed of in a controlled manner.	Contractor	LGED
Sand Extraction/River dredging/Canal Re-excavation	• Impact on river ecology • Changes in the river morphology including erosion of banks and loss of agricultural land, etc.	- Material sourcing will be thoroughly assessed in the subproject ESIA. - Contractors will be prohibited from opening new areas in local Rivers for extracting and/or sourcing sands, including areas in local rivers that remain in relatively good natural conditions and areas that support fish of conservation importance.	Contractor	LGED

Issues/ Activities	Potential Environmental Impacts	Proposed Mitigate Measures	Responsibility	
			Implementation	Supervision
		- Community adjoining local rivers will be mobilized in the monitoring of contractors. - All contractors will be required to submit their Construction Materials Sourcing Plans to the PMU, CSC and the World Bank for prior approval before carrying out material extraction. No material extraction will be done by any of the Contractors until the Materials Sourcing Plan is approved by the PMU, CSC and the World Bank. - The PMU and CSC will regularly monitor material extraction to ensure proper implementation of the Materials Sourcing Plans.		
Drainage Congestion	• Construction of diversion road on the river/ Khal/canal create drainage congestion; • Stockpiling of construction materials in the river/khal/canal also create drainage congestion.	– Pier of the existing bridge structures and other construction waste should be clearly removed from the construction site during dismantling of existing structure; – Construct diversion road on the river/khal/canal by keeping provision of open space so that water flow cannot hamper by the construction activities; – Immediately remove all the construction debris from the construction site as well as from the water bodies in a planned way; – Duration of stockpiling should be minimized as much as possible; – Avoid the encroachment of the water bodies; – Protect water bodies from sediment loads by silt screen or bubble curtains or other barrier; – Construction activity should be recommended during the dry season; – Construction workers shall be instructed to protect water resources;	Contractor	LGED

Issues/ Activities	Potential Environmental Impacts	Proposed Mitigate Measures	Responsibility	
			Implementation	Supervision
Erosion and Siltation	• Bank erosion at the project site will loss of lands; • Vulnerable for the structures; • Increase turbidity and impact on aquatic life; • Loss of productive land, structures, resources.	– Introduce bank protection activities; – Use of geo-bag, stone and concrete to construct the protection wall; – Plantation more vegetation to reduce surface soil erosion and enhancement of the soil compactness and stability; – Diversion road should be removed properly as soon as possible;	Contractor	LGED
Road Traffic and Accidents	• Increased traffic use of narrow access road by construction vehicle will affect the movement of normal road traffics and the safety of the road users specially the students	– Proper Traffic Management Plan (TMP) should be prepared by the contractor during starting of construction & follow it strictly; – In this TMP, the road safety measures such as speed breakers, warning signs/lights, road safety signs, flagman etc. should be included to ensure uninterrupted traffic; – Movement specially at nearby the educational (Schools, colleges, Madrasha etc.), community infrastructure (mosques, graveyards, Prayer Ground etc.) and health complex; – In addition, BRTA traffic rules and regulations should be strictly followed; – Divert traffic to follow alternative routes to avoid traffic jams; – Avoid talking with mobile during driving.	Contractor	LGED
Quarries and Borrow Pits	• Increased noise level caused by blasting, movement of construction vehicles; • Increased noise level will be impacted on the local community;	– Create noise barrier around the construction site; – Stop unnecessary engine operation in the construction site; – Maintain vehicles and construction equipment in good working condition including regular servicing; – Control the movement of construction traffic in the access road; – Construction equipment causing excess pollution (e.g. visible smoke) will be banned from construction sites immediately prior to usage;	Contractor	LGED

Issues/ Activities	Potential Environmental Impacts	Proposed Mitigate Measures	Responsibility	
			Implementation	Supervision
	• Air pollution due to diesel fumes and dust generation resulting from the presence of construction machinery and site cleaning activities.	– Water spray to the dry earth/material stockpiles, access roads and bare soils as and when required to minimize the potential for environmental nuisance due to dust; – Stored materials such as: excavated earth, dredged soil, gravel and sand shall be covered and confined to avoid their wind drifted; – Restore disturbed areas as soon as possible by vegetation.		
Landscape and Aesthetics	• Excavation of borrow pits, stock piling of construction materials, placing of construction equipment and parking of construction vehicles; • Presence of construction camps, equipment and their activities; • Movement of construction vehicles on the existing road network and temporary haul roads; • Closure of existing bridges by construction of diversion road.	– Parking of construction vehicles and stockpiling of construction materials/excavated earth should be done in systematic way to avoid the damaging of aesthetics of the site; – Duration of stockpiling should be minimized as much as possible; – Vegetation plantation after complete of the construction work; – Completely remove the construction camp facilities, equipment's and their activities; – Limit the speed of the vehicles and cover the vehicles during the movement or transportation of materials on the existing road network and temporary haul road; – Plantation of trees at the construction site after completion of the construction activities immediately.	Contractor	LGED
Occupational Health and Safety	• Campsites for construction workers and Safety are the important locations that have significant impacts such as health and safety	– Construction workers camp shall be located at least 500 m away from the nearest habitation; – Consider the location of construction camps away from communities in order to avoid social conflicts; – Create awareness among the camp users on health and safety requirements to be maintained and code of conduct;	Contractor	LGED

Issues/ Activities	Potential Environmental Impacts	Proposed Mitigate Measures	Responsibility	
			Implementation	Supervision
	hazards on local resources and infrastructure of nearby communities.	– Implement OHS measures as per LMP.		
	• Lack of proper infrastructure facilities, such as housing, water supply and sanitation facilities will increase pressure on the local services and generate substandard living standards and health hazards	– Adequate housing for all workers should be provided avoiding over crowing; – Safe and reliable water supply; – Hygienic sanitary facilities and sewerage system; – Implement OHS measures as per LMP.	Contractor	LGED
	• Management of wastes is crucial to minimize impacts on the environment.	– Ensure proper collection and disposal of solid wastes within the construction camps; – Insist waste separation by source; organic wastes in one container and inorganic wastes in another container at sources; – Dispose organic wastes in a designated safe place on daily basis; – The organic wastes should be always covered with a thin layer of sand so that flies, mosquitoes, dogs, cats, rats, etc. are not attracted; – Locate the garbage pit/waste disposal site minimum 500m away from the resident area so that people are not disturbed with the odor likely to be produced from anaerobic decomposition of wastes at the waste dumping places.	Contractor	LGED
	• There will be a potential for diseases to be transmitted including	– Provide adequate health care and sanitation facilities within the construction sites;	Contractor	LGED

Issues/ Activities	Potential Environmental Impacts	Proposed Mitigate Measures	Responsibility	
			Implementation	Supervision
	malaria, exacerbated by inadequate health and safety practices. • There will be an increased risk of work crews spreading sexually transmitted infections and HIV/ AIDS.	– Train all construction workers in basic sanitation and health care issues and safety matters and on the specific hazards of their work; – Provide HIV awareness programming, including STI (sexually transmitted infections) and HIV information, education and communication for all workers on regular basis; – Regular mosquito repellant spraying during monsoon periods.		
	• Construction work may pose health and safety risks to the construction workers and site visitors leading to severe injuries and deaths.	– Provide the workers a safe and healthy work environment; – Provide appropriate PPE for workers, such as safety boots, helmets, masks, gloves, protective clothing, goggles, full-face eye shields and ear protection; – Maintain the PPE properly by cleaning dirty ones and replacing them with the damaged ones; – Appoint an environment, health and safety manager to look after the health and safety of the workers; – Inform the local authorities responsible for health, religious and security before commencement of civil works and establishment of construction camps so as to maintain effective surveillance over public health, social and security matters.	Contractor	LGED
	• Lack of first aid facilities and health care facilities in the immediate vicinity will aggravate the health conditions of the victim.	– Provide health care facilities and first aid facilities are readily available; – Document and report occupational accidents, diseases, and incidents and actions taken; – Identify potential hazards to workers, particularly those that may be life threatening and provide necessary preventive and protective measures; – Provide awareness to the construction drivers to strictly follow the driving rules;	Contractor	LGED

Issues/ Activities	Potential Environmental Impacts	Proposed Mitigate Measures	Responsibility	
			Implementation	Supervision
		– Provide adequate lighting in the construction area and along the roads in the construction site.		
Community Health and Safety	• Accidents on the approach road and construction site; • Noise and dust pollution; • Communicable diseases can spread among the local community.	– Prior to start the construction activities contractor will be informed the local community; – Instruct the drivers and limit the speed of the vehicles; – Regular health checkup of the workers and awareness training about the communicable diseases; – Ban all swimming and fishing activities in the construction site, in case of a bridge site; – Proper lighting at the project site during the night time; – Avoid unnecessary noise pollution; – Spraying water in the dry surface to reduce the dust pollution – Provide proper access control to the project site and unauthorized entry to the project site will be controlled by deploying security personnel.	Contractor	LGED
Impacts on Archaeological/ Historical/ Social/ Cultural/ Religious Sites	• Air and dust pollution; • Noise level may create uncomforted; • Vibration can effect social/ cultural/ religious sites.	– Create temporary barrier around the project site; – Regular spraying of water in the construction site and approach road to reduce the dust emission; – Control the speed limit about 30 km/hour in the construction site and approach road; – Construction activities should be continued during day time only; – Carefully handling of construction machineries and equipment's near the sensitive receptors near the project site.	Contractor	LGED
Housing and Commercial Structures	• Air and dust pollution; • Noise level may create uncomforted; • Loss of income and employment; • Mental stress;	– Spraying water on the dry surface to reduce dust pollution; – Create noise barrier around the construction sites; – Limit the speed of vehicles in the construction site; – Prior notice to the local inhabitants for resettlement issues if required; – Compensation should be given to the PAPs in-time according to RAP;	Contractor	LGED

Issues/ Activities	Potential Environmental Impacts	Proposed Mitigate Measures	Responsibility	
			Implementation	Supervision
	• Resettlement or removal due to realignment of approach road; • Vibration can effect on structures.	– Realignment of approach road if required; – Job opportunities for the PAPS and priority should be given; – Plantation of trees in an appropriate location will be determined by the LGED after consultation with the concern authority (Forest Department).		
Flora and Fauna	• Dust will be generate during earthwork and deposited on the leaves of nearby trees, this will abduct the growth of trees. • Construction activities will increase sediment loading of streams and changes in turbidity will impact adversely upon fishes and aquatic animals. • Diversion at bridge site will act as barriers to the migration of fishes and aquatic animals. • Noise generation from the construction vehicles and equipment's can create disturbance for the birds and wildlife;	– Proper construction management plan should be introduce in the Contractor LGED construction sites; – Regular water spraying in the dry area from where there is a possibility to dust pollution; – Proper management plan for the waste management in the construction sites; – Construction work should be preferred during dry season; – No disturbance for aquatic animal and keep provision for the fish movement; – Diversion road should be removed properly as soon as possible; – Construction activities should be continued during day time only; – Create noise barrier and avoid unnecessary machineries and equipment's operation; – Vegetation plantation after compilation of the construction work; – Construction workers shall be instructed to protect natural resources, flora and fauna, including wild animals and aquatic life, hunting and unauthorized fishing are prohibited; – Natural river/khal/canal will be reinstated after completion of construction works; – Fingerling (fish) can be released to the river/khal/canal near the bridge site to boost up the fish resources.	Contractor	LGED

Issues/ Activities	Potential Environmental Impacts	Proposed Mitigate Measures	Responsibility	
			Implementation	Supervision
Disturbance to Wildlife Movement	• Noise from construction machineries and vehicles, movement of workers likely to be disturb the movement of wildlife; • Permanent migration may occur from the area; • Increase of mortality due to collision with vehicles;	– Instruct workers and contractors to avoid harassment and Contractor LGED disturbance of wildlife; – Schedule activities to avoid disturbance of wildlife during critical periods of the day (e.g., night) or year (e.g., periods of breeding, nesting); – Turn off all unnecessary lighting at night; – Maintain noise-reduction devices (e.g., mufflers) in good working order on vehicles and construction equipment; – Temporary fencing around the construction site during construction period; – Educate workers regarding the occurrence of important resources in the area and the importance of their protection, including the appropriate regulatory requirements; – Regular monitoring of the death and disturbance of wildlife in the construction site.	Contractor	LGED
Fisheries and other Aquatic Animals	• Increase turbidity and siltation can spawning beds for fish; • Noise from pile driving activities, aquatic animals including fishes will be affected; • Turbid water can reduces the infiltration of sunlight into deep water.	– Construction activities is preferred during the dry season; – Careful handling of construction waste in the construction site; – Introduction of land/soil erosion and dust control practices in the construction site; – Provide adequate space for movement and safe passage of fishes and other aquatic animals; – Schedule activities to avoid disturbance of fish and aquatic anima during critical periods of the day (e.g., night) or year (e.g., periods of breeding); – Turn off all unnecessary lighting at night to avoid attracting and disturbance of fishes; – Maintain noise-reduction devices (e.g., mufflers) in good working order on vehicles and construction equipment; – Regular monitoring the fish death and disturbance of fish and aquatic animals in the construction site;	Contractor	LGED

Issues/ Activities	Potential Environmental Impacts	Proposed Mitigate Measures	Responsibility	
			Implementation	Supervision
		– Fingerling (fish) can be released to the river/khal near the bridge site to boost up the fish resources		
Influx of construction workers	• Availability on the resources like food, housing, water resources; • Communicable diseases may also spread; • Social Conflict.	– Contractor should be ensured the availability of water for the construction activities; – Provision of clean drinking water in the construction camp in accordance with Schedule 3(b) of ECR, 1997; – Trained the workers by providing health and safety training on communicable diseases; – Educating project personnel, and area residents on risks, prevention, and available treatment for vector-borne diseases; – No child and/or forced labour will be employed by the EPC contractor; – Working conditions and terms of employment will be fully compliant to the Bangladesh labour laws.	Contractor	LGED

Note: Mitigation/enhancement measures cost will be determined during the environmental assessment of individual projects base on its location, types of construction, implementation schedule, cost for project implementation requirement of mitigation/enhancement activities.

During Operation Phase

For mitigating the possible environmental impacts during operational phase mitigation measures are proposed in the following Table 6.8c.

Table 6.8c: Mitigation/Enhancement measures during Operation phase of the project construction, rehabilitation and maintenance program under LGED

Issues/ Activities	Potential Environmental Impacts	Proposed Mitigation Measures	Responsibility	
			Implementation	Supervision
Air Pollution	• Dust emission from the increasing number of vehicles in the site area; • Vehicular emission from burning fuels.	– Establish the speed breaker to limit the speed of the vehicle near the site; – Strictly follow the BRTA rules and regulations; – Increase number of plantation by adding new species of trees on the appropriate locations after consultation with the concern authority.	LGED	LGED
Surface Water Pollution	• Remaining construction materials may be washed by the rainfall into the water sources and lead to sedimentation and increase turbidity; • Hazardous materials spilled by accidents; • Soil erosion during rainy season can contaminate nearby surface water.	– Remaining construction materials will be completely remove from the proposed project site after completing of the construction activities; – Cover the bare surface by plantation of trees/vegetation to reduce the surface soil erosion; – Speed control measures close to the site to reduce the occurrence of accidents; – Bank protection work can be done at the site; – Avoid rainy season for continuing any development activities.	LGED	LGED
Ground Water Pollution	• Accidental spillage of hazardous chemicals and materials.	– Speed control measures close to the site to reduce the occurrence of accidents; – Inform to the concern authority to take necessary action to reduce the contamination of groundwater.	LGED	LGED

Issues/ Activities	Potential Environmental Impacts	Proposed Mitigation Measures	Responsibility	
			Implementation	Supervision
Hydrology and Flood pattern	• Increase flood/ water logging/ drainage condition; • Encourage for erosion and siltation.	– During the planning stage and site selection local hydrology and flooding level will be considered; – Vertical navigation clearance should be kept in design and planning; – A separate and details hydro-morphological study should be conducted before starting construction activities; – Site should be clean properly after completion of the construction activities so that the natural drainage system may not hampered.	LGED	LGED
Noise Pollution	• Faulty engine and hydraulic horn may increase the noise level.	– Necessary instruction for the drivers; – Establishment of signboard near the sensitive receptors like mosques, schools, temple, bazar etc.	LGED	LGED
Flora and Fauna	• Dust will hinder vegetation growth; • Increase number of death of wildlife and collision with the vehicles; • Avifauna will be affected by the movement of vehicles; • Fish and other aquatic animals will be affected.	– Re-plantation of various suitable local trees can be done on the slopes of the roads or the suitable locations around the project site; – Establishment of speed breaker or signboard indicating the movement route of the wildlife; – No disturbance for aquatic animal and keep provision for the fish and other aquatic animals movement; – Diversion road should be removed properly as soon as possible; – Construction workers shall be instructed to protect natural resources, flora and fauna, including wild animals; – Natural river/khal/canal will be reinstated after completion of construction works; – Fingerling (fish) can be released to the river/khal/canal near the bridge site to boost up the fish resources.	LGED	LGED
Landscape and Aesthetics	• Land use of the proposed project area will be changed; • Improper removal of construction camp	– Tree/vegetation plantation at the suitable site; – Proper removal of construction camp facilities and construction wastes from the site after completion of the works;	LGED	LGED

Issues/ Activities	Potential Environmental Impacts	Proposed Mitigation Measures	Responsibility	
			Implementation	Supervision
	facilities and other construction waste will affect landscape and aesthetics.	– Excavated borrow pit area will be properly managed by the contractor, it will be preferred to use dredging materials after quality testing.		
Disturbance of Boat Communication	• Boat communication will be affected due to the improper vertical navigation clearance.	– A detailed hydrological study including the consideration of the local flood level before design stage; – Detailed morphological study should also be conducted; – For the existing bridges dismantling pier of the bridges will be fully removed from the channel.	LGED	LGED
Road Traffic and Accidents	• Number of vehicles movement will be increased in the area; • Encourage drivers to higher the vehicle speed and road accidents may increase.	– Establish speed breaker and road safety sign; – Keep provision of walk way both sides on the bridge for the people movement; – A proper traffic management plan can be introduced and strictly follow the BRTA rules; – Keep provision of adequate lighting facilities at the site; – Avoid using mobile phone during driving.	LGED	LGED

Note: Mitigation/enhancement measures cost will be determined during the environmental assessment of individual projects based on its location, types of construction, implementation schedule, cost for project implementation and requirement of mitigation/enhancement activities.

6.8 Required Site Specific Management Plans (ESS 1-10)

Site Specific Management Plans will be prepared by the contractors of the sub-projects. Selection of the management plans required by the sub-projects will be determined by the ESS requirements, applicable ECoPs and recommendation of ESMP. WB will review and clear plans for substantial risk sub-projects. Those lower than substantial risk will be reviewed and cleared by PIU/PMC/DSM.

Sand or soil borrowing plan (if required from river bed, agriculture land and wetlands): will be prepared and implemented by the contractors on the basis of the ECoPs and the mitigation measures given in Table 6.8a-c. The Plan will describe among others the methodology to be adopted, restrictions to be followed, prior survey to be conducted, and documentation to be maintained for the sand extraction. The Plan will be submitted for review and approval before initiating the sand extraction activity.

Pollution Prevention Plan: will be prepared and implemented by the contractors on the basis of the ECoPs and WBG EHS Guidelines (1997) that will be part of the bidding documents. The Plan will be submitted for review and approval before contractor mobilization.

Waste Disposal and Effluent Management Plan: will be prepared and implemented by the Contractor on the basis of the ESMP, ECoP, and WBG EHS Guidelines (1997), which will be part of the bidding documents. The Plan will be submitted for review and approval before contractor mobilization.

Drinking Water Supply and Sanitation Plan: Separate water supply and sanitation provisions will be needed for the temporary facilities including offices, labor camps and workshops in order not to cause shortages and/or contamination of existing drinking water sources. A Plan will be prepared by the contractors on basis of the ESMP and ECoPs, which are part of the bidding documents. The Plan will be submitted for review and approval before contractor mobilization.

Occupational Health and Safety (OHS) Plan: will be prepared and implemented by each contractor on the basis of the WBG EHS Guidelines (1997), ECoPs, mitigation plan, and other relevant standards. The Plan will be submitted for review and approval before contractor mobilization. For labor-intensive maintenance works to be carried out by poor people in rural areas, OHS measures outlined in the Labor Management Procedures will be implemented by LGED.

Traffic Management Plan: will be prepared by each contractor after discussion with LGED and authorities responsible for roads and traffic. The Plan will be submitted for review and approval before contractor mobilization. The Plan will identify the routes to be used by the contractors, procedures for the safety of the local community particularly pedestrians, and monitoring mechanism to avoid traffic congestion.

Construction Camp Management Plan: will be prepared by each contractor. The Plan will include the camp layout, details of various facilities including supplies, storage, and disposal. The Plan will be submitted for review and approval before camp establishment.

Fuel and Hazardous Substances Management Plan: will be prepared by each contractor in accordance with the standard operating procedures, relevant guidelines, and where applicable, material safety data sheets (MSDS). The Plan will include the procedures for handling the oils and chemical spills. The Plan will be submitted for review and approval before contractor mobilization.

Emergency Preparedness Plan: will be prepared by each contractor after assessing potential risks and hazards that could be encountered during construction. The Plan will be submitted for review and approval before contractor mobilization.

Plantation Plan: A plantation plan will be prepared for the trees to be planted on the project construction site. The Plan will include the species to be planted, the plantation methodology, and plantation layout.

Environmental Management of Resettlement Sites: will be prepared by the Contractor in compliance with the stand-alone ESMP prepared for Resettlement Sites and presented in the main ESIA.

Health, Safety and Environment Plan: will be prepared by LGED to address solid waste and emergencies associated with workers and community health and safety and to properly manage waste effluents generated from the maintenance works. The Plan will be submitted to the World Bank for review and approval prior to completion of construction.

Resettlement Action Plan (RAP): A separate RPF has been prepared for LGED sub-projects.

Communication Strategy: A formal communication strategy will be prepared for the project laying out various communication needs and outreach tools and explaining the responsibility of PIU to convey the project impacts and its implications for various stakeholders. A key aspect of this strategy shall be the communication of any project related impacts.

Environmental Improvement Plans

Biodiversity conservation and monitoring: Detailed ecological studies will be carried out, during ESIA study in the project impact area, to broaden the existing baseline data. The ESIA of WeCARE should identify potential sites of sensitive ecological area, mangrove area, fish conservation area, locations of dolphin conservation, habitat for coastal birds, sea turtle, etc. in the project area. The proposed study will confirm these locations, identify additional locations and islands/chars of conservation significance and prepare detailed conservation plans and implement these plans. A consulting firm will be hired to carry out the studies and to conduct biodiversity monitoring during the construction and post-construction periods.

Pest Management Plan: has been prepared during ESMF, this will be used to provide training of farmers and project staff based in research vessels on integrated pest control. A community NGO is suggested to engage to implement the IPM plan.

6.9 Consultation and Participation Plan (ESS10)

A separate SEP has be prepared which discussed this ESS10 requirements elaborately.

6.10 Labor Management Procedures (ESS2)

A standalone LMP will be prepared to fulfill the requirement of ESS2 and will be disclosed by LGED.

6.11 Guideline for preparation of Environmental and Social Monitoring Plan

The monitoring plan is the key element of ESMP to be prepared on the basis of impact assessment described in earlier section. The Plan describe the potentially negative impacts of each program activity, lists mitigation and control measures to address the negative impacts, and assigns responsibilities for implementation and monitoring of these measures. The Plans for the WeCARE, Phase I will be prepared and included in the ESIA; similar plans will be prepared for the later phases and included in the associated ESIAs. Table 6.9 presents the sample format of these plans. An overview of monitoring requirement of the key environmental and social impacts described in Chapter 5 is given in Table 6.10.

Table 6.9: Format of Monitoring Plan-During Project Implementation Period (Sample)

Environmental Impact/Issue	Actions	Responsibility		Key Performance Indicator	Timing	Cost Allocation
		Execution	Monitoring			
1. Activity: Design / pre-construction considerations of infrastructures						
1.1 Changes in land use, loss of properties, cultivated land and grazing land, relocation of settlements and amenities	– The RAP will be implemented for permanent land acquisition and loss of assets/ livelihood and other similar impacts	LGED PIU	EMU	• Documentary evidence of RAP implementation • Establishment of resettlement sites • Payment of compensation amounts • People resettling in new villages • Income levels of displaced households • Number of public grievances re resettlement and compensation	Before construction	Included in Overall program Cost
	- Contractors will lease the land for construction facilities on temporary basis. Proper documentation will be carried out for this leasing. Site selection will be carried out in consultation with the community and local officials; approval from DSM will also be required for the selected sites.	Contractor	DSM/EMU	• Documentary evidence of land leasing for temporary facilities • DSM approval for the selected site(s) • Absence of grievances regarding temporary facilities	Before contractor mobilization	Included in contractors' costs
1.2 borrowing construction material	- A material (particularly river sand and soil from agricultural land/wetlands, if required) borrowing plan will be prepared	Contractor	DSM/EMU	• Approved plan • Plan itself will outline appropriate KPIs for its implementation.	Before construction	Included in Contractors' costs

Table 6.10: Overview of Impacts, Mitigation and Monitoring Plan

Impacts/Issues	Mitigation Measures	Time Frame	Cost (USD x 10^6)	Responsibility		Key Monitoring Indicators	Monitoring Frequency
				Implementation	Supervision		
ENVIRONMENTAL IMPACTS DUE TO PROJECT SITING							
Land cover and land use changes	Relevant ECoPs of site selection. Integrated Pest Management Plan; Linkages with ongoing pest management programs	2019 onwards	In budget of ESMP	PIU	DSM, PIU	- to be developed under IPM	Six-monthly
Loss of natural vegetation and trees	Compensatory tree plantation along reconstructed embankment	2019-2023	In budget of ESMP	PIU	DSM, PIU	- trees cut and trees planted	Monthly
Loss of aquatic habitat	Organic shrimp firming/aquaculture expansion Fish sanctuaries/MPA in BoB	2019-2023	In budget of ESMP	PIU	DSM, PIU	- abundance of fishes and species diversity in MPA/sanctuaries	Quarterly
Drainage congestion and water logging	Installation of regulators and culverts	2019-2022	Project design	Contractor	DSM, PIU	- User committees are formed and trained, area water logged	Quarterly (Monthly during flood season)
ENVIRONMENT IMPACTS DURING IMPLEMENTATON PERIOD							
Impacts of burrowing of material from river beds, agriculture land and wetlands (if required)	Compliance with relevant ECoPs of sand extraction, agricultural top soil management and wetland digging	2019-2023	In budget of Contractor	Contractor	DSM, PIU	Sites approved, ongoing visual inspection of sand extraction	At the beginning of works and through sand extraction
Air pollution	Pollution prevention and implementation of ECoPs	2019-2023	In budget of Contractor	Contractor	DSM, PIU	Plan approved and implemented; community complaints	Quarterly
Noise	Noise control measures and relevant ECoPs	2019-2023	In budget of Contractor	Contractor	DSM, PIU	Plan approved and implemented; community complaints	Quarterly
Water pollution	Pollution prevention and control plan	2019-2023	In budget of Contractor	Contractor	DSM, PIU	Plan approved and implemented	Quarterly
Soil contamination	Pollution prevention and control plan	2019-2023	In Contractors budget	Contractor	DSM, PIU	Plan approved and implemented	Quarterly
Solid wastes and hazardous wastes	Waste management and pollution control plan	2019-2023	In budget of Contractor	Contractor	DSM, PIU	Plan approved and implemented	Quarterly

Impacts/Issues	Mitigation Measures	Time Frame	Cost (USD x 10^6)	Responsibility		Key Monitoring Indicators	Monitoring Frequency
				Implementation	Supervision		
Impacts on aquatic habitat	Treatment of waste effluents	2019-2023	In budget of Contractor	Contractor	DSM, PIU	Sites approved and ongoing monitoring of plan implementation	Before and during construction
Impacts on wildlife habitats	No construction related activities on sensitive wildlife habitat, use of low wattage lights at construction sites	2019-2023	In budget of ESMP	Contractor	DSM, PIU	Biodiversity monitoring studies	Six monthly
Site clearance and restoration	Site restoration and landscaping	2019-2023	In budget of Contractor	Contractor	DSM, PIU	Sites established and cleared	After construction
Occupational health and safety	Implement health and safety, and emergency response plan	2019-2023	In budget of Contractor	Contractor	DSM, PIU	Plan prepared and implemented	Quarterly
ENVIRONMENTAL IMPACTS DURING POST PROJECT PERIOD							
Changes in water courses (canal)	Long term monitoring and biodiversity conservation measures	2023 on wards	In budget of the project	LGED	LGED	Biodiversity conservation measures	Quarterly
Generation of solid waste	Implementation of Health Safety Environment Plan	2023 on wards	LGED annual budget	LGED	LGED	Plan prepared and implemented	Six monthly
Air and noise pollution	Air and noise quality and appropriate measures	2023	LGED annual budget	LGED	LGED	to be developed	
Water pollution	Organic aquaculture, water treatment, etc.	2023 on wards	LGED annual budget	LGED	LGED	Working condition of connected canals, mariculture area	Annually
Ecological connectivity	Implementation of relevant ECoPs of wetland connectivity	2023 on wards	LGED annual budget	LGED	LGED	Plan prepared and implemented	Annually
Loss of vegetation	Implementation of related ECoPs of plantation	2023 on wards	LGED annual budget	LGED	LGED	Plan prepared and implemented	Annually
Impact of avifauna	Implementation of related ECoPs of wildlife management	2023 on wards	LGED annual budget	LGED	LGED	Plan prepared and implemented	Annually

6.12 Monitoring Program

As one of the key elements of the ESMP, a three-tier monitoring program is proposed comprising compliance monitoring, effects monitoring, and external monitoring. The main purpose of this monitoring program is to ensure that the various tasks detailed in the ESMP particularly the mitigation measures are implemented in an effective manner, and also to evaluate program impacts on the key environment parameters. Various types of ESMP monitoring are discussed below.

Compliance Monitoring

The purpose of the compliance monitoring is to ensure that the contractor implements the mitigation measures given in the ESMP are effectively and timely implemented. This monitoring will generally be carried out by the DSM/PMC with the help of checklists to be prepared on the basis of the Mitigation Plan (Table 6.11).

Effects Monitoring During Project Implementation

Effects monitoring is a very important aspect of environmental management to safeguard the protection of environment. The effects monitoring plan proposed for the WeCARE, Phase I is presented in Table 6.8; after the specific ESIA, this program will be revisited and revised. The monitoring will comprise surveillance to check whether the contractor is meeting the provisions of the contract during construction and operation of the program including the responsible agencies for implementation and supervision.

Table 6.11: Effects Monitoring Plan

Parameter / Activity	Location	Means of Monitoring	Frequency	Responsible Agency	
				Implemented By	Supervised By
During Project Implementation					
Sand extraction/soil collection	At all sand extraction points	Ecological inspection of the site prior to development; and extraction carried out not in long stretches	Weekly	Contractor	DSM
Sediment Quality for heavy metals	Canal/riverbed sediments at 5 locations	Laboratory analysis for analysis of metals and oil/grease (lead, cadmium, chromium, copper, manganese, mercury and zinc)	Before sand extraction	Contractor through a nationally recognized laboratory	DSM
Soil Pollution	Canal, construction site, camp	Visual inspection that filling is through	Beginning of earth filling works	Contractor	DSM

Parameter / Activity	Location	Means of Monitoring	Frequency	Responsible Agency	
				Implemented By	Supervised By
	& RS	several compartments			
	Canal, construction, RS and material storage sites	Ensure no contaminated effluent is leaving from the filling area to the nearby agricultural lands	Weekly	Contractor	DSM
Stability of slopes	Side slopes of sluice gates, canal dyke, pond dyke, and Resettlement Sites	Compaction as per contract specifications, Visual inspection of erosion prevention measures and occurrence of erosion	Monthly	Contractor	DSM
Hydrocarbon and chemical storage	Construction camps and yards	Visual Inspection of storage facilities	Monthly	Contractor	DSM
Traffic Safety	Construction Access Roads	Visual inspection to see whether proper traffic signs are placed and flag-men for traffic management are engaged	Monthly	Contractor	DSM
Air Quality (dust, smoke)	Construction sites	Visual inspection to ensure good standard equipment is in use and dust suppression measures (e.g., spraying of waters) are in place.	Daily	Contractor	DSM
	Material storage sites	Visual inspection to ensure dust	Monthly	Contractor	DSM

Parameter / Activity	Location	Means of Monitoring	Frequency	Responsible Agency	
				Implemented By	Supervised By
		suppression work plan is being implemented			
Air quality	Sensitive receptors along construction corridor	24 hours continuous monitoring with the help of appropriate instruments and analyzers (particulate matter, carbon dioxide, sulphur and nitrogen oxides)	Quarterly	Contractor	DSM
Noise	Construction sites	Noise measurement using noise meter; Ensure work restriction between 21:00-06:00 close to the sensitive locations	Weekly	Contractor	DSM
Surface Water Quality	At the baseline monitoring sites at five sites	Sampling and analysis of surface water quality (TDS, Turbidity, pH, dissolved oxygen, biological and chemical oxygen demand)	Quarterly	Contractor through a nationally recognized laboratory	DSM
Groundwater quality	Locations of tube-well installation (for workers camps and RS), Shrimp firm, Other buildings, fish landing centers, markets, etc.	Depth of tube well should be more than 30m. Test water for arsenic iron and manganese before installing of casing. If the quality is found not suitable further deepening will be done.	During drilling of wells	Contractor trough a nationally recognized laboratory	DSM

Parameter / Activity	Location	Means of Monitoring	Frequency	Responsible Agency	
				Implemented By	Supervised By
	Water wells to be used by contractors for drinking	Laboratory analysis of all drinking water parameters specified in national standards	After development of wells	Contractor trough a nationally recognized laboratory	DSM
Plantation	Canal slopes, building construction sites, affected vegetation sites	Visual inspection to ensure plantations are taken care of.	Monthly	Contractor	DSM
Waste Management	Construction camps and construction sites, other infrastructure sites, markets, laboratory, etc.	Visual inspection that solid waste is disposed at designated site	Monthly	Contractor	DSM
Drinking water and sanitation	Construction camps and construction sites, markets, other infrastructure sites, laboratory, etc.	Ensure the construction workers are provided with safe water and sanitation facilities in the site by checking drinking water quality	Weekly	Contractor	DSM
Flora and Fauna	Sensitive habitats in Project influence area	Survey and comparison with baseline environment Ensure use of lighting at construction sites conforms with requirements to limit impacts to wildlife	Six-monthly	Biodiversity Conservation and Monitoring Consultant	DSM, LGED

Parameter / Activity	Location	Means of Monitoring	Frequency	Responsible Agency	
				Implemented By	Supervised By
Fish migration	Regulators, canal, rivers, beels, etc.	Sample fish catch	Monthly after installation of regulators	Consultants	DSM, LGED
Restoration of Work Sites	All Work Sites	Visual Inspection	After completion of all works	Contractor	DSM, LGED
Safety of workers Monitoring and reporting accidents	At work sites	Usage of Personal Protective equipment and implementation of contractor OHS plan	Monthly	Contractor	DSM, LGED
Grievances (environmental issues)	In the project area	Number of grievances registered and addressed	Monthly	PIU	DSM, LGED
During Post Project Period					
Stability of protection works	Canal slopes, regulators sites, and Resettlement Sites	Visual inspection of erosion prevention measures and occurrence of erosion	Monthly	LGED	LGED
Plantation	Construction sites, canal slopes, pond dyke, setc.	Visual inspection to ensure plantations are taken care of.	Monthly	Contractor	DSM
Fish migration	Regulators, canal re-excavation, rivers, beels, etc.	Sample fish catch	Monthly during migration season	Consultants	DSM, LGED
Waste effluents	Construction camps and construction sites, other infrastructure sites, markets, laboratory,	Visual inspection that solid and liquid waste effluents are properly managed during post project period	Six-monthly	Environmental Desk of LGED	LGED

Parameter / Activity	Location	Means of Monitoring	Frequency	Responsible Agency	
				Implemented By	Supervised By
	research vessels, etc.				
Pesticide residue in soil and water	Cultivation fields, *khals* and *beels*	Laboratory analysis of pesticide related parameters	Six-monthly	LGED through a nationally recognized laboratory	LGED

Third Party Monitoring

LGED will engage an independent consulting firm to conduct external and independent monitoring of the ESMP implementation. The main purpose of the external monitoring will be to ensure that all the key entities including EU, DSM, PMC and contractors are effectively and adequately fulfilling their designated role for ESMP implementation, and that all the ESMP requirements are being implemented in a timely and effective manner. The ToR of the external monitoring will be presented in the ESIA report.

Performance Indicators

For evaluating the performance of the environmental management and monitoring plan, performance indicators are identified to for efficient and timely implementation of measures/actions proposed in ESMP. The indicators are defined both for implementation phase and for post project period. DSM will be responsible for compiling the information on these indicators and report to LGED.

Separate performance indicators for each environmental issue will be specified in the mitigation plans for the WeCARE, Phase I and included in the associated ESIA. To measure the overall environmental performance of the program, an additional list of performance indicators is given below.

- Number of inspections carried out by DSM per month.
- Number of non-compliances observed by DSM or EU.
- Availability of environmental specialists in EU.
- Availability of environmental specialists in DSM.
- Availability of environmental specialists with contractors.
- Timely reporting of documents (as defined in ESMP and monitoring plan).
- Number of trainings imparted to stakeholders/other capacity building initiatives.
- Timely disbursement of compensation/ timely resettlement of program affectees.
- Timely implementation of resettlement schedule.
- Number of grievances received.
- Number of grievances resolved.
- Number of construction related accidents.

6.13 ESMP Implementation Cost

Cost estimates will need to be prepared for all the mitigation and monitoring measures to be proposed in the specific ESIA in accordance with the ESMF. The cost estimates for some of the mitigation measures to be identified in the ESMP will be part of civil works contract. Some of suggestive activities from ESIA will be implemented by hiring NGO.

The Development Project Proposal (DPP)/Technical Assistance Project Proposal (TAPP) of LGED/MoLGRDC for the proposed program should reflect the ESMP activities with budget for successful environmental management of the program.

Total US$ 3.5 million is estimated for implementation of ESMF which should be embedded in the proposed total project budget from IDA.

Table 6.12: Cost Estimates for ESMF implementation of the WeCARE-LGED Sub-projects

SN	Description	Amount million US$
1	Contractor's Budget for development of management plans, staff, training, etc.	0.2
2	Water, soil and air quality monitoring during construction (quarterly for 5 years)	0.5
3	Tree plantation development and maintenance	1.0
4	Baseline Ecological Studies, development of conservation plans and biodiversity monitoring during construction and operation (5 years), training to workers, monitoring of sites	1.0
5	Integrated pest management	0.1
6	Independent Consultants to prepare ESIA and ESMP	0.3
7	PIU/DSM Environmental staff	0.3
8	Capacity building and institutional strengthening	0.1
	TOTAL	**3.5**

Chapter 7: Institutional Framework

7.1 Key Players involved in the Implementation of the WeCARE-LGED ESMF

7.1.1 Governmental and Non-Governmental Organizations

The success of the proposed environmental and social assessment depends on the clear identification and allocation of responsibilities and functions, as well as the capability of the project management team in collaboration with other agencies, to take proper actions throughout the various stages of the proposed project activities. The following organizations may involve during the implementation of LGED projects:

- Environmental Unit of Local Government and Engineering Department (LGED);
- Department of Environment (DoE);
- Forest Department(FD);
- Local Government Engineering Department (LGED);
- Bangladesh Water Development Board (BWDB),
- Roads & Highways Department (RHD);
- Bangladesh Agricultural Extension (BAE),
- Bangladesh Road Transportation Authority (BRTA);
- Bangladesh Inland Water Transport Authority (BIWTA);
- Local Administration (District/Upazila/Union);
- Community based organizations;
- Non-government organizations.

For the successful implementation of the ESMF the key institutions have the following responsibilities:

A. Ministry of Local Government, Rural Development and Cooperatives

Ministry of Local Government, Rural Development and Cooperatives is the umbrella agency in Bangladesh undertaking the planning and development, maintenance and management of roads including bridges and culverts as allocated by the government. The overall responsibility of the ministry comprises the coordination with the other ministry for finalization including budget allocation for the project implementation.

B. Local Government and Engineering Department (LGED)

The LGED, being the project proponent for construction, rehabilitation and maintenance works and has primary responsibility for planning, surveying and supervision of the program. The LGED is also responsible for all feasibility study relating to the selected projects. The other responsibilities of the LGED will be as follows:

- Awareness creation (by workshops & training courses both in-house and in the upazila/ district level offices) of LGED personnel involved in construction, rehabilitation and maintenance programs with regard to environment safeguard aspects;
- Participation in the environmental and social assessment screening and scoping processes by the LGED officials (environment management unit);
- Initial Environmental Examination (IEE) and Baseline report preparation for selected projects;
- Environmental and Social Impact Assessment (ESIA) and Social Impact Assessment report preparation for LGED projects (e.g. new bridge construction larger than 100m length);

- Review, accept or reject recommendations submitted by the FS for new projects, covering for example, alternative analysis, specific mitigation measures, environmentally sound techniques in construction & maintenance works, monitoring parameters & schedules;
- Provide/verify/modify budget estimates for environmental safeguard measures;
- Review the draft ToR for the environmental study and forward them to DoE for approval;
- Preparation of contract specification, ensure specific environmental safeguard clauses are duly incorporated in the bidding documents, the BOQs and in the construction contracts;
- Performing (or outsourcing) supervision and monitoring for compliance;
- Monitor compliance with EMP and SMP as stipulated by the respective IEE, EIA and SIA report;
- Monitor compliance with RAP as applicable coordinating with other agencies for implementing the ESMP and RAP; and
- Conduct Environmental Audit of the projects as required and scheduled.

C. Department of Environment (DoE)

The DoE has been placed under the MoEF as its technical wing and is statutorily responsible for the implementation of the ECA, 1995. The principal activities of the DoE are:

- Defining ESIA procedures and issuing environmental clearance permits the latter being the legal requirement before the proposed Project can be implemented;
- Providing advice or taking direct action to prevent degradation of the environment;
- Pollution control, including the monitoring of effluent sources and ensuring mitigation of environmental pollution;
- Setting the Quality Standards for environmental parameters;
- Declaring ECAs, where the ecosystem has been degraded to a critical state; and
- Review and evaluation of IEE and ESIA prepared for projects in Bangladesh.

7.1.2 Consultants

There are many well experienced environmental consultancy firms in Bangladesh working with environment aspects in different development projects. LGED can appoint a qualified consultancy firm or individual consultant to carryout environmental assessment studies. Individual expert consultants can also be engaged to carryout environmental monitoring of the ESMP. The consultant will be responsible for supervising all environmental safeguard measures that outlined in the ESMP. They also responsible to verify all safeguards are reflected correctly and clear in the bidding documents, in the BOQs and in the works contracts.

7.1.3 Contractors

There are many well reputed construction firms in Bangladesh; LGED can appoint other local construction firm for the implementation of the development projects. The main responsibilities of contractors during the implementation of the projects include new construction, rehabilitation and maintenance of existing infrastructures in accordance with the bidding documents, including compliance with the ESMP, prepared during IEE/ESIA studies. The contractors will be responsible for implementing community and occupational health and safety measures.

7.1.4 Interactions and arrangements between the key institutions

The process of ESIA as well as the monitoring of the ESMP involves substantial linkage and coordination between various line agencies. The LGED (Environment Unit) will play a vital role in coordinating and managing this process.

This organizational integration and cooperation is very important for environmental assessment, reporting, management and the monitoring process for the large number of upcoming projects under the LGED. The LGED will also liaise with the local NGOs, for grassroots level work with project affected communities. These NGOs are instrumental in supporting the implementation of the ESMF.

7.2 Profile of the Local Government Engineering Department

The LGED under the Ministry of Local Government, Rural Development and Cooperatives is one of the largest public sector organizations in Bangladesh entrusted for planning and implementation of road, bridges and culverts and other sectors programs. It works closely with the local stakeholders to ensure people's participation and bottom-up planning in all stages of project implementation cycle. The Chief Engineer is the head of the LGED.

The broad objectives of the LGED's development activities are:

- To improve the socio-economic condition of the country through supply of infrastructure at local level and capacity building of the stakeholders;
- Promotes labour-based technology to create employment opportunity at local level and uses local materials in construction and maintenance to optimize the project implementation cost with preserving the desired quality; and
- Works in a wide range of diversified programs like construction of roads, bridges/ culverts and growth centers/markets in order to expedite social mobilization, empowerment and environmental protection.

7.2.1 Mission and Vision of the LGED

The prime mission of the LGED is to development and management of local infrastructure for increasing farm/non-farm production, generating employment, improving socio-economic condition, promoting local governance, reducing poverty and acting as agent of change at the local level.

The LGED follows the following vision:

- Developing, maintaining and managing transport, trading and small scale water resources infrastructure at the local level by ensuring LGI and community participation and taking care of environmental and social issues; and
- Providing technical and institutional support to strengthen the local government institutions and serving local communities and other stakeholders.

7.3 Establishment of Environmental Management Unit of LGED

In our constitutions, the environmental issues are highlighted in the form of pressing aspects like, environmental protection and biodiversity conservation issues. In the Article 18 A : Protection and Improvement of Environment and Biodiversity; of the Constitution of the People's Republic of Bangladesh states that, "The state shall endeavor to protect and improve the environment and to preserve and safeguard the natural resources, biodiversity, wetlands, forest and wildlife for the present and future citizens". In recognition of the long term development challenge, the government has set development targets in its "Vision 2021" which aims at achieving a transformation in the socio-economic and environmental areas that will help Bangladesh to graduate to a middle income country by 2021.

In order to harness the speed of development with commitment to environmental protection and safeguard, ensuring sustainable development is the key concept worth to follow. Environmental management and consideration of environmental issues are very important for any development works in Bangladesh. The GoB also considers and prioritizes the issues in planning and implementation stages of all of its development activities.

In our country perspective the rapid economic growth coupled with a rising population is putting a high toll on the environment, ecology and natural resources. Recognizing these challenges, LGED can take the opportunities to meet the target of the GoB by reducing the stress on land and water for ensuring sustainable environment. They already have initiated to follow an environmentally sustainable development process in its entire development works through conservation of natural resources, reduction of air and water pollution and recouping of encroached rivers, water bodies and forest areas. To ensure the environmental sustainability, the LGED has already established an Environmental Management Unit, headed by a Superintending Engineer.

7.4 Organizational Structure of EMU

Headed by a Superintending Engineer, two Executive Engineers are responsible for Environment and Social unit of the EMU in order to help the focal person of EMU to act separately in environmental and social sections. Under each section two Assistant Engineers are positioned for helping the Executive Engineers. They are the officially responsible for ensuring environmental and social consideration in all of the project activities of the LGED. All of the engineers are provided with adequate training on different environmental and social issues for capacity building.

The following organizational chart shows the present manning structure in the central environmental unit at LGED (see Figure 7.1).

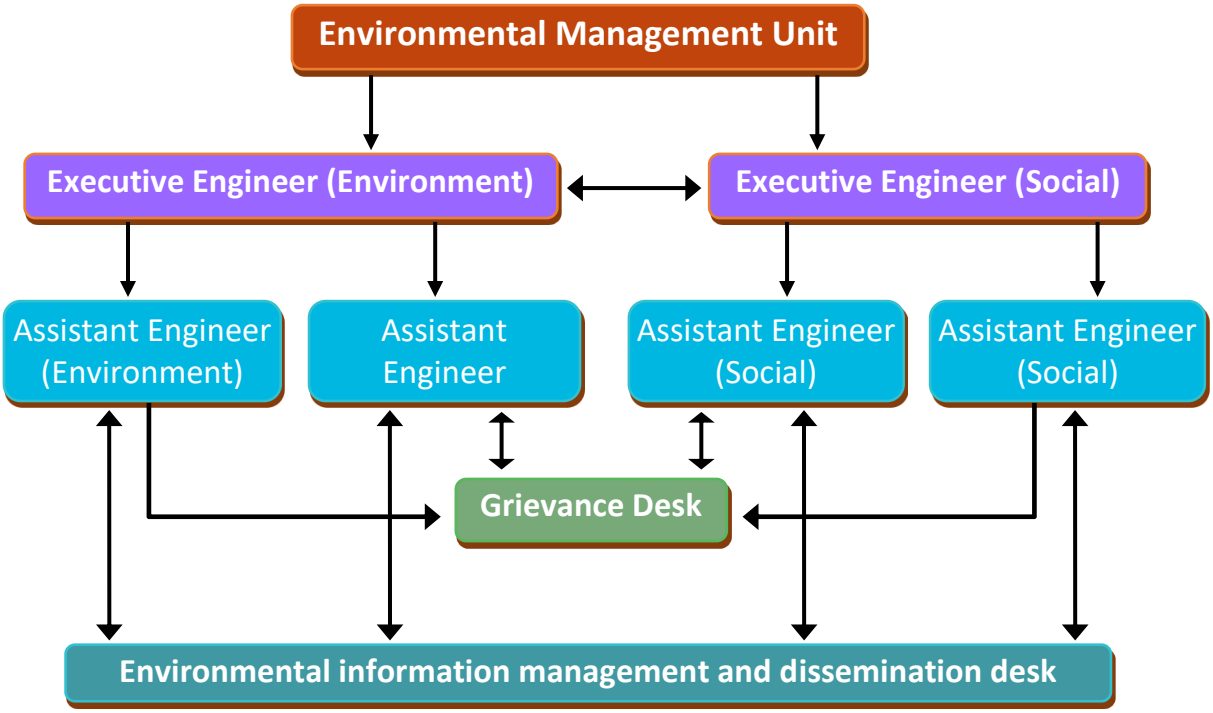


Figure 7.1: Organizational structure of the EMU

7.4.1 Responsibilities of the EMU

The main responsibilities of the Environmental Management Unit include the follows:

- Clearly define the role and responsibilities of the staffs in the project implementation of the environmental and social aspects;
- Preparation of Terms of Reference for the project incorporating the environmental issues;
- Provide suggestions in different stages of the project such as: project planning, site selection, feasibility study, design and implementation;
- Evaluation of construction related environmental impacts and monitoring;
- Prepare and implementation of environmental management plan (such as evaluation of construction related environmental impacts and monitoring, implementation of monitoring such as: hydrology and drainage, navigation, riverbank erosion and siltation, traffic congestion, environmental quality monitoring, tree plantation, landscaping, wildlife, cultural sites monitoring) during construction and maintenance stages of the projects;
- Ensure incorporation of appropriate environmental specifications into the respective bidder and contract documents;
- Facilitate appointing appropriate environmental consultants for successfully environmentally friendly implementation of the project;
- Supervision and monitoring of the progress of environmental activities of the consultant for implementation of projects;
- Assist implementing agencies' engineers at site by providing appropriate environmental advices and developing appropriate environmental mitigation measures as per the sub-projects;
- Monitoring of occupational health and safety of the project workers (such as: pure drinking water, sanitation, personal protective equipment etc.);
- Facilitate carrying out participatory consultation during planning, design and implementation of the sub-projects;
- Resolve the grievance issues during the different stage of the project implementation;
- Update the environmental code of practices of LGED and other practices suitable for different projects; and

7.4.2 Maintain liaison with other government and non-government organizations, donors, stakeholders and other institutes regarding environmental and social management of the project implementation efficiently.Functions and the staffing responsibilities of EMU

Superintending Engineer/Head of the EMU

- Assist the Project Directors of the construction, rehabilitation and maintenance programme at LGED in conducting environmental screening and categorization of the sub-projects;
- Assist the Project Director of the construction, rehabilitation and maintenance programme in the preparation of the environmental assessment and implementation of the EMF during the project implementation period;
- Ensure integration of the environmental and social assessment and resulting environmental and social management plan into the sub-projects design and implementation plans (contract documents);
- Ensure compliance of the mitigation measures by the Contractors;
- Ensure incorporation of appropriate environmental specifications (on the basis of screening and ECoP) into the respective bidding and contract documents;

- Assist the LGED Engineers at site by providing appropriate environmental advice and developing appropriate environmental mitigation measures for the sub-projects;
- Documenting the experience in the implementation of the environmental process;
- Assist Management Support/Design Support consultant's and LGED community organizer to carryout participatory consultation during planning, design and implementation of the sub-projects;
- In collaboration with the Environmental Specialist, prepare and conduct training programs for the LGED Engineers and Contractors by incorporating standard construction practices and sound environmental management of the bridges sub-projects; and
- Prepare periodic progress reports on the implementation of the EMF for transmission to the donors throughout the project implementation period.

Executive Engineers (Environment and Social)

- Assist the Project Directors of the construction, rehabilitation and maintenance programme at LGED in the proper and timely implementation of ESMF of the project;
- Assist the PD in screening and categorization process of the sub-projects;
- Preparation of the environmental and social assessment and finalization of the same in close co-ordination with the consultants and donors;
- Ensure compliance of the respective ECOPs, environmental and social management plan during sub-projects design and implementation including post construction;
- Assist the PD in obtaining Environmental Clearance certificate from the Department of Environment;
- Assist in arranging and development of training programme for the key stakeholders like LGED, contractors, public representatives and local government institutions/ NGOs, in collaboration with the Environmental Specialist;
- Review and approve the Contractor's Implementation Plan for the environmental and social measures, as per the environmental and social management plan;
- Liase with the Contractors, Consultants for the implementation of the environmental and social management plan;
- Liase with the Department of Environment on environmental and other regulatory matters;
- Interact with the NGOs and Community based organizations to be involved in the project for environmental and social management plan implementation;
- Dialogue with the PAPs and ensure that the environmental and social concerns and suggestions are incorporated and implemented in the project;
- Undertaking environmental and social monitoring and reporting to the PD and follow-up activities;
- Document the standard construction practices in the project on incorporation and integration of environmental and social issues into engineering design and on implementing measures in the construction, rehabilitation and maintenance program;
- Assist the project director to arrange for the Environmental and Social Auditing and follow up action on the Audit recommendation;
- Report to the project director on the environmental and social aspects pertaining to the project;
- Guide and assist the project director and the LGED to strengthen the environmental and social management practices in infrastructure development projects base on the experiences gained in the implementation of the construction, rehabilitation and maintenance program.

Assistant Engineers (Environment and Social)

- Assist the consultants in environmental and social screening process
- Assist the project management unit in environmental and social assessments for the projects;
- Assist in obtaining of requisite Environmental Clearance Certificate for the project;
- Assist the Executive Engineers (Environment and Social) in preparation of the training materials and in conducting training;
- Review the contractor's implementation plan for the environmental and social measures, as per the environmental and social management plan;
- Liaison with the contractors on the implementation of the EMF and ESMP;
- Carry out consultations with the NGOs and Community groups to be involved in the project;
- Establish dialogue with the affected communities and ensure that the environmental and social concerns and suggestions are incorporated and implemented in the project;
- Carry out site inspections, check and undertake periodic environmental and social monitoring and initiate necessary follow-up actions;
- Document the good practices in the project on incorporation and integration of environmental and social issues into engineering design;
- Report to the Executive Engineer (Environment and Social)/Project Director on the environmental and social aspects pertaining to the project;
- Assist in the preparation of periodic reports for dissemination to the project management unit and donors etc.

7.4.3 Requirement of additional expert

In addition to that, qualified consultant (environment and social specialist) can be recruited by the LGED in a temporary basis to provide technical assistance, training and capacity building to the environmental and social sections. In generally, the roles and responsibilities of the environmental and social expert should be as follows, but not limited:

- Supervision of the implementation of the ESMP by the Contractors;
- Monitor and review the screening and categorization process for each bridges sub-project;
- Develop, organize and deliver environmental and social training programmes and workshops for the staff of the EMU, contractors, field supervision staff, LGED officials and the quality auditors;
- Review and approve site specific environmental and social enhancement/mitigation designs worked out by the contractors;
- Hold regular construction meetings;
- Review the contractors environmental and social implementation plans to ensure compliance with the environmental and social management plan;
- Plans to ensure compliance with the ESMP;
- Develop good practice construction guidelines to assist the contractors in implementing the ESMP;
- Monitor tree plantation programmes and the periodic environmental and social monitoring programmes to ensure compliance with the ESMP & GOB requirements;
- Prepare and submit regular environmental and social monitoring and implementation progress reports;

- Identify suitable locations for sitting of labour camps, construction waste disposal locations, construction and vehicle parking/maintenance sites and obtain the approval of the environmental specialist of the consultant of the same;
- Ensure that proper environmental and social safeguards are being maintained at all ancillary sites such as brick fields, borrow areas, brick crushing area, materials storage yards, worker's camps etc. from which the contractor procures material for construction;
- Supervise the proper construction and maintenance of the facilities for the labour camps, including the provisions for the safety and health of workers and their families;
- Ensure that proper facilities are available for the monitoring of water quality and vehicular emissions as provided for in the environmental monitoring plan during the construction period.

7.5 Institutional Arrangements for ESMF implementation in LGED

The following institutional arrangements have been suggested in this ESMF, recommended to elaborate during specific IEE/ESIA of WeCARE, Phase I. For the later phases, these arrangements will be revisited and modified as appropriate.

7.5.1 During Project Implementation

The WeCARE implementation will be led by the Project Implementation Unit (PIU) that will be established within LGED. The PIU will be headed by the assigned Project Director (PD), supported by Environmental Safeguards Expert and Social Safeguards Expert. Further details of the institutional arrangement for the overall WeCARE management should be available in the ESMP of specific IEE/ESIA report for WeCARE, Phase I under the Institutional Arrangement volume.

As LGED has already set-up an EMU (Environmental Management Unit) with qualified staff in its regular organogram, this EMU under the leadership of a LGED officer will assist the PIU (i.e. PDO) on issues related to environmental and social management by forming a formal Social, Environment, and Communication Committee (SECC). EMU/SECC will oversee the Design Supervision Management (DSM)/Project Management Consultants and other contractors (to be engaged in project activities implementation) and will compile quarterly monitoring reports on ESMP compliance, to be sent to the Project Director and also shared with the World Bank, throughout the project implementation period. The EMU/SECC will also provide trainings to the LGED field personnel responsible for monitoring of environmental compliance during both implementation and subsequent post project period of the program. Thus, smooth transition to LGED will happen to ensure environmental compliance during the post project period. The organogram for ESMF implementation arrangement is shown in Figure 7.2.

The overall responsibility of environmental performance including ESMP implementation of the WeCARE will rest with the PIU (i.e. PDO). Aside from their in-house environmental and social specialists, the PIU will engage Design supervision Management Consultant (DSM)/ Project Management Consultant (PMC) to supervise the contractors including environmental and social management requirements and measures on their execution of construction-related, infrastructural development and other activities that have significant negative environmental impacts identified in the ESMF/ESIA. The DSM/PMC will ensure adherence to the monitoring parameters including quality requirements, as well as all ESMP measures.

The EMU will have adequate numbers of environmental and social scientists/specialists and maintain coordination and liaison with DSM/PMC for effective ESMP implementation. Similarly, the DSM/PMC will also have environmental and social monitors who will supervise and monitor the contractors for effective ESMP implementation. The contractors in turn will also have Health, Safety and Environment (HSE) supervisors who will ensure ESMP implementation during implementation of different activities (including

construction) and will be tasked to develop necessary detailed HSE plans as per this ESMP, and oversee their implementation.

The PIU will also engage an independent organization to carry out third party environmental monitoring during project implementation. The roles and responsibilities of EMU/SECC, DSM/PMC, external monitor, and contractors are presented in Table 7.1 below.

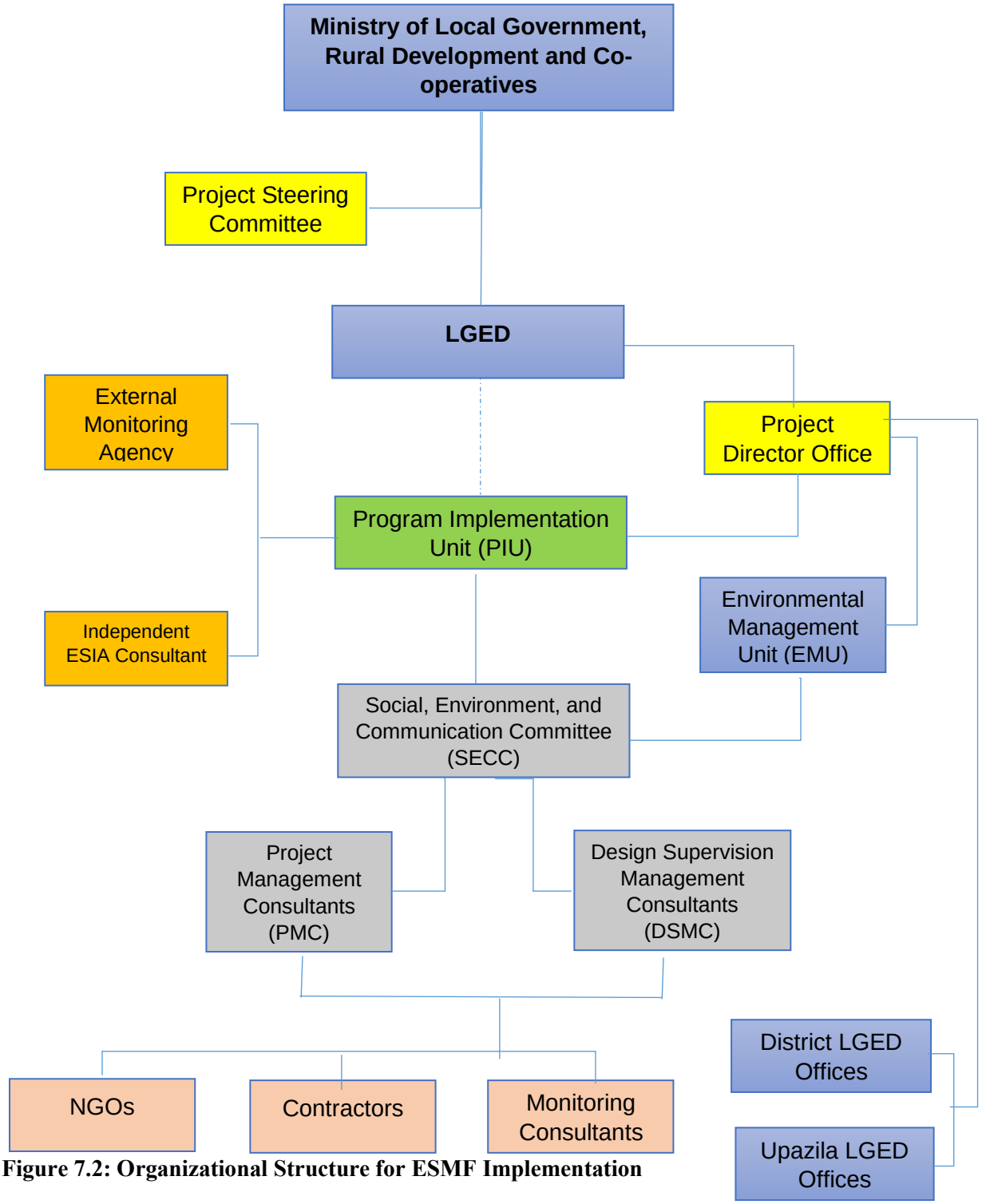


Figure 7.2: Organizational Structure for ESMF Implementation

Table 7.1: Roles and Responsibilities of ESMF Implementation

Organization	Responsibilities
PIU (PDO)	• Ensure that all sub-project activities are well-managed and coordinated • Procurement of works and goods • Payment of compensation to the project affectees • Recruitment and supervision of Design Supervision Management Consultants (DSM)/Project Management Consultants (PMC) • Recruitment and supervision of external monitoring consultant
EMU/SECC	• Ensuring inclusion of ESMP in bidding documents • Providing training on ESMP principles and requirements to DSM, contractors, LGED field staff, and others as needed to ensure effective implementation of ESMP • Supervising DSM/PMC for the implementation of ESMP • Ensure that all the project activities are carried out in environmentally sound manner • Closely coordinate with other concerned agencies, local governments and communities to support implementation of ESMP • Preparation of progress reports on implementation of ESMP • Ensure effective implementation of ESMP components not directly tasked to the contractor including components dealing with indirect, induced and cumulative effects, as well as operations and maintenance (post project) stage plans and measures • Commissioning and oversight/review of consultant reports for ESIAs/ESMPs
DSM	• Supervise civil works, ensuring compliance with all design parameters including quality requirements and supervise all other project activities that have significant environmental impact • Supervising contractors for ESMP implementation • Prepare monthly reports and submit to PIU • DSM will have dedicated environmental and social staff
PMC	• Assist PIU in execution of the project activities • Responsible for preparing all project documents • Provide support in project management and operation at day to day basis • Prepare contract documents and other necessary reports • Supervise contractors engaged in the project implementation to perform their works
Contractor/NGO/Others	• Responsible for implementation of mitigation and monitoring measures proposed in the ESMP • Each contractor will recruit an Environmental, Health, and Safety Manager (EHSM), who will be responsible for implementing the contractors' environmental, health and safety responsibilities, and

Organization	Responsibilities
	liaising with government agencies. S/he will have adequate number of staff to support him/her for these tasks
External Monitor	• Independent monitoring of implementation of ESMP • External Monitoring and evaluation

7.5.2 Post Project Monitoring Period

For the environmental and social management of the project during the post project monitoring period, LGED will be lied on EMU/SECC, which will have adequate numbers of the environmental specialists and will also benefit from training by the project. During the life of the project loan, the PIU/SECC will remain ultimately responsible for all environmental monitoring aspects of the project, but with the goal of gradually transitioning this role with respect to environmental and social dimensions of monitoring requirements to the Environmental Desk, including through capacity building activities as well as on-the job involvement of team members in post project monitoring stage ESMP implementation.

7.6 Capacity Building Plan

Capacity building for effective implementation of the ESSs requirements is a key element of the ESMP. Capacity building for environmental and social safeguard management will need to be carried out at all tiers of the program, including LGED, EMU, and contractors. At the construction site, EMU will take the lead in implementing the capacity building plan, though the contractors will also be responsible to conduct trainings for their own staff and workers. The various aspects that are covered under the capacity building will include general environmental and social awareness, key environmental and social sensitivities of the area, key environmental and social impacts of the program, ESMP requirements, OHS aspects, and waste disposal.

A separate Capacity Building Plan (CBP) for the LGED WeCARE has been prepared under the Capacity Assessment Bangladesh/WB which will the main guiding document to build capacity of LGED for implementing the ESMF. Following paragraphs have discussed summary of the capacity building requirements assessed in the above report.

7.6.1 Strengthening the New Environment and Gender Unit of LGED

The planned Environment and Gender Division at LGED should be redesigned to cover not only gender but also other social safeguards issues. The division may then be appropriately renamed Environmental and Social Safeguards Division (ESSD). The unit's functions should include preparation of safeguards instruments; review and quality control of ES reports; conduct of ES compliance monitoring and audits; development or updating of the LGEDs various safeguards frameworks, and coordination with relevant regulatory agencies and authorities. A more expanded table of organization and staffing pattern reflecting the various expertise required, should be adopted.

7.6.2 Staff Recruitment for LGED

At the LGED WeCARE PMU, two staff consisting of one (1) Environmental Safeguards Specialist and one (1) Social Safeguards Specialist shall be recruited to support the PMU in implementing the program ESMF while at the EGD, which would have been renamed ESSD, three (3) advisors consisting of Environment Advisor; OCHS and Road Safety Advisor and Social Safeguards Advisor. The ESSD would also have the similar minimum set of technical staff as with RSEC (Table 7.2).

Table 7.2 Staff Recruitment Plan for the Program at LGED's ESS

Staff	Specialization, Functions or Area of Coverage
At the PMU	
1 Environmental Safeguard Specialist	Supports the PMU in implementing the WeCARE ESMF
1 Social Safeguard Specialist	Supports the PMU in implementing the WeCARE ESMF
At LGED's EGD (Environment and Gender Division) renamed ESSD (Environmental and Social Safeguards Division)	
A. Program-based Staff	
1 Senior Safeguard Advisor	Leads the team in reorganizing the RSEC and ESSD
1 OHS and Road Safety Advisor	Helps RSEC develops OCHS and Labor Management Framework for LGED projects
1 Social Safeguard Advisor	Helps RSEC develops RPF, IPPF, SEP, Cultural Heritage and Grievance Mechanism Frameworks
B. Permanent Staff	
1 Involuntary Resettlement Specialist	Provides technical backstop on ROW acquisition and RAP/RPF preparation, quality control of RAP reports, monitoring and evaluation of RAP
1 Socio-economist	Provides technical backstopping on social assessments and on socioeconomic issues other than involuntary resettlement and indigenous peoples
1 Sociologist	Provides technical backstop on Indigenous People, Cultural Heritage, Gender and Stakeholder Engagement
1 Environmental Engineer	Specializes and provides technical backstop on physical environmental issues of road construction including but not limited to drainage, slope mitigation, erosion and sedimentation control and design measures for road safety
1 OCHS and Labor Management Specialist	Specializes and provides technical backstop on OHS and labor management and community health safety issues, post-construction management measures for road safety
1 Ecologist	Specializes and provides technical backstop on biodiversity and wildlife management, and ecological community health issues

7.6.3 Training Plan

Advanced training on environmental and social management and monitoring would be useful for the engineers of the EMU of the LGED in successfully implementing environmental and social management. It is also necessary to provide the basic training for key personnel on regulatory requirements, environmental impacts, and environmental assessment and management in home or abroad. They can participate in field based training including the environmental and social impact assessment, screening, scoping, mitigation and monitoring of existing construction, rehabilitation and maintenance projects under the LGED. Different organizations in Bangladesh like: DoE, IEB, FD, Climate Change Unit, training

institutes/organizations etc. provide training on environment, social, disaster, climate change etc. issues that would be better for their capacity development.

The training program for ESSD Staff shall be based on their expanded functions and new and additional safeguards areas covered by the World ESF. Hence, a general introduction to the new World Bank ESF should be priority, followed Labor and Working Conditions, Community Health and Safety and Stakeholder Engagement. The next priority should be training on the preparation and review of RPF and RAP, and the training on the preparation and review of IPPF and IPP. LGED would have some experienced staff on Resettlement but not in the EGD (proposed to be renamed as ESSD) which is still to be organized. Although not expected to undertake preparation of RPF, RAPs and IPPF and IPPs, the staff of both ES units need to possess these skills in order to effectively manage consultants hired to prepare these reports as well as review these reports. In regard to ESIA, a training should also be schedule later in Year 1 of the program to update on the new scope of study brought about by the ESF. The other areas which the units should immediately be trained on are field compliance monitoring and audits, particularly on ESMP Compliance and occupational and community health and safety audit, cultural heritage assessment and impacts management; and biodiversity and wildlife impact management for road projects (Table 7.3). Finally, since in the long run it will efficient for the staff of ES units to contract out works to consultants, not the preparation of ESIA and RAPs, but also field monitoring and evaluation, it is imperative that the staff of both units shall be skilled in consulting contract management. Hence a training module on such topic is also proposed.

Table 7.3. Training plan for LGED-ESSD and relevant agency staff

Seminar Topic/Training Module	**Prospective Attendees**	**Time Frame**	**Indicative Cost in '000 USD**
1. Introduction to World Bank ESF	PMU staff, ESSD Staff, Regulatory other Agency representatives	Year 1, Year 3, Year 5	10
2. Labor and working conditions	PMU staff, ESSD Staff, DOL and DIFE representatives, MHFW rep.	Year 1, Year 2	20
3. Community health and safety	ESSD Staff, MHFW representative	Year 2	10
4. Stakeholder Engagement	ESSD Staff, Field Engineers	Year 1	10
5. Preparation and review of RPF and RAP	ESSD Staff, Field Engineers especially potential resettlement officers, Ministry of Lands, DC reps	Year 1	10
6. Preparation and review of IPPF and IPP	ESSD Staff, Field Engineers in regions with IPs	Year 1	10
7. Preparation of ESIA under ESF	PMU staff, ESSD Staff, DOE by invitation		
8. ESMP compliance monitoring and audit	PMU staff, ESSD Staff and Field Office Engineers	Year 1, Year 2	20

Seminar Topic/Training Module	Prospective Attendees	Time Frame	Indicative Cost in '000 USD
9. RAP compliance monitoring and audit	ESSD Staff and Ministry of Lands, DC reps and Engineers	Year 1, Year 2	20
10. OCHS and Labor Management audit	ESSD Staff and Field Engineers, BRTA reps	Year 1, Year 2	20
11. Cultural heritage impacts management	ESSD staff, Department of Archaeology staff.	Year 3	10
12. Biodiversity and wildlife management in road projects	ESSD staff, LGED and RHD Engineers and Forestry Department Staff	Year 1	10
13. Contract and Consultant Management Module			
		Total	150

7.6.4 Training/Seminar and Workshops for Regulatory Agencies

The capacity building action plan for other agencies will be limited to awareness seminars on the elements of the new World Bank ESF. Representative of these agencies will be invited to the trainings/seminars on the Introduction of the new World Bank ESF and to the relevant skills training to be conducted for the PMU, LGED (Table 7.4). Moreover, ESSD staff shall establish linkages and coordinate with these agencies formally through department directors or informally through focal point persons in the development and regular updating of the relevant aspects of the ESRMF, templates and protocols and in the conduct of project-specific activities such as scoping, review and monitoring and audit of projects. The Advisors and ESSD staff may also conduct workshops with and seek comments and inputs from the relevant agencies in the development the ESRMF and related templates and protocols. Table 7.4 below lists the potential workshops to be held with relevant agencies for the benefit of improving the LGED's safeguards frameworks, templates and protocols.

Table 7.4 Workshops of ESSD with regulatory agencies and other relevant authorities

Workshop Topics	Participants	Cost Estimate in '000 USD
Development of Labor Management Plan Template	ESSD, DOL, DIFE	5
Development of ESMP Compliance Monitoring Protocol	ESSD, DOE	5
Development of OCHS Audit Protocol	ESSD, DIFE, MHFW	5
Development of Biodiversity Management Plan Template	ESSD, DOE, BFD	5

Workshop Topics	Participants	Cost Estimate in '000 USD
Development of Chance Find Procedure	ESSD, Department of Archaeology	5
Development of Resettlement Policy Framework and RAP template	ESSD, Ministry of Land, DCs, Field Engineers	5
Development of IP Policy Framework	ESSD, NGO	5
	Total	35

7.6.5 Monitoring and Evaluation

To keep track of the progress and outcomes of the implementation of the Capacity Building Action Plan, the management of the WeCARE program will periodically monitor and evaluate the sets of indicators in Tables 7.5 and 7.6. A Cap Plan Monitoring and Evaluation Report should be provided to and discussed with the World Bank project team during each supervision mission.

Table 7.5 Capacity Development Indicators

Actions	Indicator	Method of Collection
Inputs		
Staff Recruited at LGED PMU	No. of new staff hired Number of consultants hired	Reports
Trainings Conducted	Number and types of trainings conducted	Reports
Coordination meetings conducted	Number of coordination meetings conducted; invitation letters sent.	Office Records
Outputs		
Expand role of ES units	Memorandum Circular expanding roles and coverage	Copy of the MC
Prepare new/update protocols	Number and types of protocols developed	Copies of the Protocols
Prepare new/update guidelines	Number and types of guidelines developed	Copies of the Guidelines
Outcomes		
Scope of activities	Range of activities conducted	Reports and Staff Interviews
Skills of staff	New tasks undertaken by staff	Reports and Staff Interviews
Resource endowments	Annual budget Office space New equipment	Reports Staff Interview
Coordination and involvement	Number of agencies involved in ES Management of LGED projects	Reports and Staff Interview
Results/Performance		
Project preparation	No. of projects/subprojects prepared by under the new ESF compliant system	ES unit records
Review and approval of projects	Number of RPF RAP reviewed and approved under the new ESF compliant system	ES unit records

Actions	Indicator	Method of Collection
Environmental and Social Auditing	Number of subprojects audited under new ESF compliant system	ES unit records
Awareness of ESF	Percentage of LGED staff that are aware of the new ESF	Staff Interviews

Table7.6. Capacity indicators for other agencies

Capacity Parameter	Indicator	Method of Collection
Output		
Coordination	No. of coordination meetings conducted with other agencies	Office records
Training	Number of other agency staff trained on ESF and other ES topics	Office records
Outcome		
Participation in project review	No. of other agency staff involved in review of LGED projects	Office records
Participation in project site audit	No. of other agency staff involved in site audit of LGED projects	Office records

7.6.6 Cost Estimate for Capacity Building LGED ESSD/EMU

Table 7.7 provides a rough cost estimate of the Capacity Building Plan, including the cost of semiannual monitoring and evaluation. A relatively modest allocation is provided for equipment of the new expanded units amounting to USD 500 thousand each for RHD and LGED.

Table 7.7. Capacity building action plan for LGED

Action	Indicative Cost USD '000
1. Setting up of reorganized and expanded functions ES units (ESSD), internal coordination meetings, workshops, consultations, etc.	25
2. Salary of project-based safeguard staff at PMUs (2 staff for 5 years)	100
3. Salary of Advisors at ESSD (3 Advisors at ES unit, for 2 years each)	300
4. Recruitment of permanent staff at ESSD (6 staff assuming all are new, salary for five years).	450
4. Trainings for ESSD and other LGED Staff, Relevant Agencies Staff	75
5. Workshops and coordination with other Agencies	18
6. Monitoring and evaluation of the Capacity Building Plan (2 times a year for five years)	50
7. Equipment (Vehicles, Office Furniture, Workstations, Monitoring Equipment, Android Tablets) - 250 for LGED	500
Total	1518

*ES Units: The Social and Environmental Circle at LGED.

Chapter 8: Stakeholder Engagement and Disclosure

8.1 Requirements of ESS 10: Stakeholder Engagement and Information Disclosure of WeCARE

A separate Stakeholders Engagement Plan (SEP) has been prepared for WeCARE which will be the main guiding document for the LGED sub-projects. The following sections are summarizing the ESMF requirements for stakeholder's consultations and disclosures specifically for preparing ESMP.

8.2 Stakeholder Consultations and Disclosure (ESS 10)

In the context of the above, Field surveys, consultations with different stakeholders, focus group discussions (FGDs) that were carried out to develop this ESMF of WeCARE LGED sub-projects, are not enough considering the project area and dimension of the stakeholders. Extensive field visits are required at the ESIA stage to overcome this shortcoming and conduct extensive discussions with the relevant stakeholders throughout the program sites to discuss components, sub-components, activities, potential positive and negative impacts and measures taken to mitigate those impacts. It is also required to record the views of each of the respondents of the consultations, irrespective of gender, profession, religion, and age groups. The ToR of the ESIA should be described in the public meetings during the initial stage of the ESIA in all the sites of the proposed project. Findings of the ESIA will also be presented in local language going back to the same stakeholders while the draft is ready to submit for DoE clearance. Consultation meetings are necessary to identify issues and problems to enable LGED to include corrective measures and to identify lessons and opportunities to enhance program implementation mechanism.

8.2.1 Objective of the Consultations

The GoB as well as international donors (e.g. the World Bank) place great importance on involving primary and secondary stakeholders for determining the environmental and social impacts associated with project implementation. In order to gather local knowledge for baseline conditions, understand perceptions of the community regarding impact significance, and propose meaningful mitigation measures, participation of stakeholders is an integral part of the environmental assessment process. During the preparation of the present ESMF, initial consultations with the key stakeholders have been carried out at 5 sites covering 2 (two) districts to obtain their views on program interventions. LGED has also organized a disclosure workshop to share the findings of the ESMF among the local stakeholders. However, additional consultations are required to fulfill the ESIA requirement of Orange B Category and WB's guideline for Category 'Substantial Risk' project.

The consultation process has been conceived, planned, and initiated with the following key objectives:

- To provide key program information and create awareness among various stakeholders about program intervention;
- To share the terms of reference of the current ESMF and proposed ESIA;
- To have interaction for primary and secondary data collection with program beneficiaries, affectees, and other stakeholders;
- To identify environmental and social issues such as displacement, safety hazards, employment, and vulnerable persons;

- To begin establishing communication and an evolving mechanism for the resolution of social and environmental problems at local and program level;
- To involve program stakeholders in an inclusive manner; and
- To receive feedback from primary stakeholders on mitigation and enhancement measures to address the environmental and social impacts of the program.

8.2.2 Methodology and Tools for the Consultation

The consultation and participation process in preparing and disclosing the ESMF was limited to selected stakeholders both at the project area and at the regional and national level, since specific sub-projects have not been identified yet. Stakeholders consultation and engagement at the individual household level was not carried out during the preparation of the ESMF. However, this will be done at the sub-projects level once they are identified and will be more inclusive irrespective of gender, profession, religion and age groups during conducting ESIA. The various tools identified in the SEP will be used for consultations including household level interviews, participatory rural appraisal, FGDs, stakeholders consultation meetings, issue specific consultation meetings, open meetings, and workshops at both local and national levels. During ESIA, consultation meetings and FGDs will be carried out in all selected Unions (lowest administrative unit) and local level workshops will be organized in all selected Upazilas (Sub-district) to ensure a comprehensive coverage of the entire program area and provide them specific list of interventions. During preparation of RPF, LGED has conducted 5 consultation meetings and workshops with different stakeholders at the initial stage and a disclosure workshop to share findings of the draft ESMF at the later stage of project preparation. The discussion and the concerns and responses are extensively documented in SEP. List of participants of those consultations and disclosure workshop are annexed in Annex I. A summary of consultation meetings are given below:

Table 8.1: Summary of Consultation Meetings and FGDs

No.	Date	Venue	Main Participant Groups	No. of Participants	
				Male	**Female**
1	24 November 2019	LGED office, Jeshore	LGED officials, ward member, UP chairman, ADC, AC land, business owners, teachers, local people, Local political leaders, local press etc	35	2
2	24 November 2019	Godkhali Bazar,Jikorgacha Upazila,Jeshore	Local people, male and female member, students, housewives, UP chairman	53	17
3	24 November 2019	Konakola Bazar,Monirampur Upazila	Local people, male and female member, students, housewives, UP chairman	33	3
4	25 November 2019	LGED office, Jhenaidah	LGED officials, ward member, UP chairman, ADC, AC land, business owners, teachers, Local political leaders, local press club secretary	53	5
5	25 November 2019	Chaprail Bazar, kaligonj Upazila, Jhenaidah	Local people, male and female member, businessmen, students, housewives, UP chairman	74	16
6	11 March 2020	LGED Bhaban, Jashore	LGED officials, journalist, LGED consultant, academicians, local people	39	0

Figure 8.1: Stakeholder Consultation Workshop_24 November 2019_LGED office, Jeshore

Figure 8.2: FGD_24 November 2019_Godkhali Bazar, Jikorgacha Upazila, Jeshore

Figure 8.3: FGD_24 November 2019_Konakola Bazar, Monirampur Upazila

Figure 8.4: FGD_25 November 2019_ Chaprail Bazar, kaligonj Upazila, Jhenaidah

Figure 8.5: Stakeholders Consultation Workshop_25 November 2019_LGED office, Jhenaidah

Figure 8.6: Disclosure Workshop_11 March 2020_LGED office, Jeshore

8.2.3 Outcomes of consultation meetings

During preparation of RPF, LGED has taken stakeholders opinion and those are incorporated with the entitlement matrix preparation. A ummary of consultation outcomes and disclosure workshop is given below:

Table 8.2: Summary of consultation outcomes

Issues	Opinion and questions	Reply from LGED
Necessity of WeCARE Program	Whether the project is implemented immediately	Yes, It will be funded soon in 2020-2021 financial year budget
RGC/RMs Improvement Activities	Women will be involved in the MMC	It is one of the condition to implement the gender friendly GC
Waste Management	Most of the market has no improve Solid/Liquid Waste Management facilities	It will be included in all GCs
Plantation	Road Side plantation pattern and species selection	LGED has Social Forestry scheme and guideline, however FD will be consulted during selection of species
Marzat Baor-ECA	Marzat baor is important for rare wetland dependent species and local fish stock	LGED will take necessary precaution during construction of roads to save this ECA-wetland
Compensation	Business Tenants and squatters should receive compensation the project	All the project affected people will receive compensation irrespective of titled and non-titles
Project location	Stakeholders asked for the specific project locations	They are informed that as project is at preliminary stage, locations are not identified. However, locations will be selected through the stakeholder's engagement. Selected locations will be disclosed.
Vulnerable HHHs/severely affected HHs	Severely affected HHs requested special assistance from the project	Project will consider special assistance mechanism for the severely affected HHs. All unskilled labors will be engaged from the community and affected HHs will be given priority.
Female HHHs	Is there any assistance available in the project	Vulnerable FHH will be provided assistance.
Improvements of local business facilities	Request for the provision of cold storage by the project for local agricultural and seasonal products (vegetables and flowers)	Project will consider the suggestions.
Grievance redress committee	GRC is available at every local market. Will there be any GRM for the project?	Project will establish a four tier GRM and the 1st level will be local.

Issues	Opinion and questions	Reply from LGED
Structure	-If one third of the structure is affected what will be the project policy -If replacement cost is more than the CCL what will be the project procedure	If the remaining structure is not safe for use, full compensation will be paid. LGED will pay top-up value to close the gap between CCL and replacement cost
Land	-What will be the compensation matrix for the land	Compensation will be paid at replacement cost.
Livelihood	Livelihood restoration provision for the project	Project will create job opportunity for the unskilled labors. Also, livelihood programs will be incorporate with the project design.
CPR	What is the resettlement assistance for the CPR? If CPRs are affected what will be the project policy Is it avoid or not?	Project will construct CPR with the cost of the project. However, same mechanism for the affected land and structures can be followed.
Trees	-Historical trees are requested not to cut -What will be the provision for tree compensation on the private land and on the govt. land -Tree compensation for the social forestry	Historical trees will be avoided. Trees compensation will be at replacement rate. Government compensation rules will be followed for the social forestry shares. However, market rate will be provided for all affected trees.
Business loss	What will be the compensation mechanism for large, medium and small business loss	Compensation for land, structures and business loss will be provided.
Wage loss	What will be the compensation mechanism for wage earners?	Wage earners will be eligible for the wage lost and will be compensated as per the resettlement policy
Road safety	-Requested foot overbridged at market place and Overpass/rail crossing	Project team will consider the suggestions

Table 8.3: Summary of disclosure workshop outcomes

Issues	Opinion and questions	Reply from LGED
Objectives	What are the objectives of this consultation?	Discussing findings of the draft ESMF
Market Organization	Whether or not MMC would be reconstituted?	Separate Study would be conducted to make it more effective under this project.
Market Leasing	Whether or not the current market leasing systems would be revised?	Separate Study would be conducted to make it more effective under this project.
Inclusiveness	Does the project would consider the special needs of the children and elderly people?	The project will not only consider the needs of the children, elderly people, and women but also the needs of Small Ethnic

Issues	Opinion and questions	Reply from LGED
		Communities (if found in the project area during implementation).
Wage discrimination	How the project will ensure the proper wage for the women?	The project has comprehensive Labor Management Plan and ESCP
Grievances	Where and how our grievances will be redressed?	The ESMF has suggested a Grievance Redress Mechanism Framwork.
Land Requirement	Requirement of land for all sub-projects	Individual sub-projects are not identified yet. However, the ESMF and Resettlement Policy Framework adopted Avoid, Minimize and Mitigation principles.
Compensation	Mechanism of compensation	Project will provide Compensation Under the Law (CUL) and Top-up payment as required for the replacement costs.
Gender	Is there any assistance available for the disadvantaged women vendors?	Yes, both structural and non-structural measures would be taken to provide assistances for such women.
Inadequate childcare	What facilities would be provided for lactating mother	All campsites will provide a designated section for the child caring.
Spoilage	Will the project provide facilities for savings the spoilages of the markets?	The interventions for each market would be undertaken after conducting detail study that may include spoilage savings.
Employment	Would the local people get the priority for employment in the project related works?	Yes, contractor will be encouraged to deploy a certain portion of employments from the locality in the construction and maintenance works.
Pond protection	Will the roadside ponds be protected?	The design will consider the pond protection aspects by constructing appropriate engineering structures.
Cultural sites	Will the roadside cultural sites be protected?	The design will consider the cultural sites by constructing appropriate engineering structures.
Monitoring	Who will conduct environmental monitoring?	LGED/EMU and the Consultants will conduct environmental monitoring.
Drainage	How the project would facilitate natural drainage?	Appropriate hydrological analysis would be undertaken for each sub-projects and opening for natural water flow would be ensured.
Accidents	How the project would contribute to reduce the numbers of casualties related to road accidents?	The project has separate component for road safety through which both engineering and educational activities will be undertaken.
Empowerment	How the project activities will empower the women?	Every activities of the project would focus on to increase the Economic Participation Rate (EPR) of the women including running their business, mobility and decision making, the GAP prepared for the project will be followed during implementation.
Recreation and tourism	Are there any arrangements for creating facilities for tourism?	After detail feasibility of each sub-project if it is deemed necessary then this could be incorporated.

8.3 Consultations and Communication Framework (ESS10)

Consultations with the key stakeholders will need to be carried out throughout the program life. These will include consultations and liaison with communities and other stakeholders during the project implementation and also extensive consultations with the grass-root as well as institutional stakeholders during the ESIA study. The framework for the future consultations is presented in Table 8.4 below:

Table 8.4: Future Consultation Framework

Description	Objective/Purpose	Responsibility	Timing	Frequency
Consultations with communities and other stakeholders during project implementation	Information dissemination; public relation; confidence building; awareness about risks and impacts; minimizing conflicts and frictions.	EU, LGED; Contractors; CSC/PMC	During Project Implementation	Project Specific Location of interventions and impacted area.
Consultations with communities and other stakeholders during ESIA study	Sharing ESIA ToR	LGED and ESIA team	During scoping stage of ESIA	Consultation Meeting at all selected Upazila; FGD at All selected Unions
	Dissemination of information on program and its key impacts and proposed mitigation measures; soliciting views, comments, concerns, and recommendations of stakeholders	LGED and ESIA team	During ESIA study (once draft analysis is available for discussion and feedback) before submission to DoE for clearance	Consultation Meeting at all selected Upazila; FGD at All selected Unions; National Stakeholders; Consultation.
Consultations with communities	Liaison with communities and program beneficiaries	LGED	Post Project Period	As and when necessary

8.3.1 Community Engagement and Stakeholders Participation (ESS10)

A standalone Stakeholders Engagement Plan (SEP) will be prepared by LGED and disclose following the ESS 10 requirements.

8.3.2 Gender Analysis Procedures and Guidelines (ESS 1, 2, 4, 5, 7)

LGED would address gender issues through approaches that are participatory and responsive to the needs of the poor, particularly when it involves management of fisheries resources. **However, a separate standalone Gender Based Violence (GBV) report will be prepared and disclose by LGED, to address the ESS requirement.**

Gender Action Plan

A gender action plan has been proposed for the project for review and updating by the LGED before implementation based on social screening, social impacts assessment and designing the activities for implementation. **However, a separate GBV document has been prepared and disclosed by LGED.**

8.4 Grievance Redress Mechanism (ESS10)

A separate GRM has been proposed under the RAF and SEP, which will guide the project GRM during implementation. The WeCARE program will establish a grievance redress mechanism (GRM) for addressing grievances and complaints received from the program -affected persons due to environmental issues. Grievance Redress Mechanism (GRM) is a valuable tool which will allows affected people to voice concerns regarding environmental and social impacts for WeCARE's activities. LGED would ensure that grievance redress procedures are in place and would monitor those procedures to ensure that grievances are handled properly. The LGED office will establish a procedure to answer sub- program -related queries and address complaints, disputes, and grievances about any aspect of the sub- program, including disagreements regarding the assessment and mitigation of environmental and social impacts. Details of the institutional arrangements and procedures are discussed in following sections.

Overview and Scope. LGED will establish will follow a Grievance Redress Mechanism (GRM) for answering queries, receiving suggestions and addressing complaints and grievances likely to raise in the project cycle including identification, planning, design and implementation. The GRM spans the entire implementation period and will cater to both the beneficiary communities and the directly and indirectly affected population including the fishers, agriculture and the other subsistence income-dependent households. Though the GRM proposed here a mechanism of redress has been designed to address environmental and social problems identified during implementation, it will also cater to manage any disconnects that emerge from the field level and that has significant implications for effective implementation of the project interventions.

Objectives of Grievance Redress Mechanism. The fundamental objective of grievance redress mechanism (GRM) will be to resolve any program -related grievances locally in consultation with the aggrieved party to facilitate smooth implementation of the social and environmental action plans. Another important objective is to democratize the development process at the local level and to establish accountability to the affected people. The procedures will however not pre-empt a person's right to go to the courts of law.

The GRM will be consistent with the requirements of the World Bank ESF to ensure mitigation of community concerns, risk management, and maximization of environmental and social benefits. The overall objective of the GRM is therefore to provide a robust system of procedures and processes that provides for transparent and rapid resolution of concerns and complaints identified at the local level. The GRM will be accessible to diverse members of the community, including women, senior citizens and other vulnerable groups focusing the fishers, agriculture and other subsistence income-dependent households and persons. Culturally-appropriate communication mechanisms will be used at all project sites both to spread awareness regarding the GRM process as well as complaints management. Where project intervention areas cover beneficiaries from the small ethnic communities, project GRM will integrate traditional grievance management system available with the small ethnic communities.

Communication & Awareness raising on GRM. The final processes and procedures for the GRM will be translated in to local language (i.e. Bangla) and disseminated at all sub-project locations. These shall be made available (in both leaflet and poster format) to all sub-project locations with CC Project Manager on site and in the offices of each DC Office.

Proposed Institutional Mechanisms. For addressing grievances, four tier grievance redress mechanism (GRM) will be established with representations from beneficiary communities including men and women, civil society organizations, elected representatives and the project proponents including LGED. The Social Development Specialist consultant with the PMU will be the contact person at LGED. In case the issue is not resolved, the aggrieved person has the option to adopt judicial procedure. In cases where vulnerable persons are unable to access the legal system, the GoB will provide legal support to the vulnerable person(s). As well as, the PMU will assist the vulnerable person(s) in getting this support from the GoB. The PMU will also ensure that there is no cost imposed (such as for travel and accommodation) on the aggrieved person, if the person belongs to the vulnerable groups including the small ethnic communities. The verdict of the judiciary will be final. The project specific GRM is summarized in the table below:

Table 8.5: The Grievance Redress Process and Timeline

Tiers of GRM	Nodal Person for Contact	Facilitation by Project	Timeframe
First Tier: Upazila Project Coordination Committee (UPCC)	Once the UPCC is created, it will be the first level of contact in specific grievance related to the management of the project or any other issue related to land; access and adverse impacts on the PAPs or community.	The UPCC will maintain a Community Information Board to record the grievance, contacting and facilitating the aggrieved person to redress.	15 days

Tiers of GRM	Nodal Person for Contact	Facilitation by Project	Timeframe
Second Tier: District Management Committee (DMC)	The grievance will be forwarded to the DMC.	Only after exhausting the first tier. Website advertisement, public notices in print media. The aggrieved person can attend the hearing in person. The Executive Engineer will be responsible to ensure that there is no cost imposed (such as for travel, etc.) on the aggrieved person if the person belongs to the vulnerable groups, the project will assist the PAPs with travel and accommodation costs, if needed.	30 days
Third Tier: LGED/ MoLGRDC – E&S Safeguards Coordinator of the Project Management Unit (PMU).	The grievance will be forwarded to the Social Coordinator at the PMU.	Only after exhausting the first and second tier. Website advertisement, public notices in print media. The aggrieved person can attend the hearing in person. The Executive Engineer and Superintend Engineer at Divisional and District level will be responsible to ensure that there is no cost imposed (such as for travel, etc.) on the aggrieved person if the person belongs to the vulnerable groups, the project will assist the PAPs with travel and accommodation costs, if needed.	60 days

Tiers of GRM	Nodal Person for Contact	Facilitation by Project	Timeframe
Fourth Tier: Independent Institutions such as Anti-Corruption Commission, Human Rights Commission etc. OR the Judiciary	Independent Institutions and the Judiciary will remain as an option for an aggrieved person and/or community in case that the other tiers have not been effective.	Only for vulnerable person (s) as per the grievance mechanism of the project. Only after exhausting both first, second and third.	As per established laws of Bangladesh

GRM Operation. Project GRM will be accessible to all communities and persons irrespective of the social status, gender, ethnic identity and disability. LGED will establish the following prior to commencing project implementation activities including identification, planning and design:

- Any person can access PMU website or office to record grievances and write a formal letter in the name of Project Director, PMU. The person can also visit the PMU office in person and log complaints.
- The PMU Office (LGED) will maintain an electronic database that will provide a summary of complaints received and their resolutions. The PMU Office (LGED) will also provide an analysis of the grievances at each project site using a pre-designed M&E template that will give insight into the type of complaints received and qualitative and quantitative review of grievance redress. The PMU Office (LGED) will also be responsible for uploading the actions and results for each grievance for each project site location on a periodic basis to the PMU website.
- Apart from the electronic database that will be maintained at the PMU level, a manual register and complaint box of all complaints and actions taken will be maintained at each project sites and locations. GRM sign boards on which Compliant numbers (Conveners phone numbers) will also be displayed at project intervention sites.
- Grievance Focal Point (GFP) will also be chosen from local community on each location of project activity.
- The PMU (LGED) and the local government bodies will issue public notices to inform the public within the project area of the GRM. Contact address, phone number, email address and web address of PMU will be disseminated to the people through displays at the respective Upazila and Union offices as well.
- Given that the female community members have restricted mobility outside of their houses, the female staff from PMU (LGED) will be required to undertake visits to the local community. The frequency of visits will depend on the nature and magnitude of activity in an area and the frequency of grievances.
- The PMU officers (LGED) will log complaints and date of receipt onto the complaint database and inform their environmental and social specialists staff;

- PMU (LGED) will coordinate with local government to "capture" complaints made directly to them;
- The PMU staff (LGED), with the help of UPCC and DMC, will investigate the complaint to determine its validity, and to assess whether the source of the problem is due to project activities, and identify appropriate corrective measures.
- The PMU (LGED) will inform the Complainant of investigation results and the action taken;
- If complaint is transferred from local government agencies, the PIU will submit interim report to local government agencies on status of the complaint investigation and follow-up action within the time frame assigned by the above agencies;
- The PMU (LGED) will review with the help of UPCC and DMC, the complainants' response on the identified mitigation measures, and the updated situation;
- The PMU (LGED) will undertake additional monitoring, as necessary, to verify as well as review that any valid reason for complaint does not recur.

World Bank Grievance Redress Service (GRS). Communities and individuals who believe that they are adversely affected by Sub-project interventions may submit complaints to existing project-level GRM or the WB Grievance Redress Service (GRS). Project affected communities and individuals may also submit their complaint to the World Bank's independent Inspection Panel, which determines whether harm occurred, or could occur, because of non-compliance with WB ESF requirements. Details of the procedures to submit complaints to the WB's corporate GRS, is available in the GRS website: *http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service.* For information on how to submit complaints to the WB Inspection Panel, please visit www.inspectionpanel.org. Any disclosure instrument on GRM will provide addresses of the GRS and the Inspection Panel.

8.5 Communication and Consultation Strategy (ESS10)

As required for informed consultation, LGED will provide communities and affected persons with all activity-related information, including that on potential adverse impacts in a language familiar to and understandable by the target communities. To facilitate consultation the implementing agency will,

- Prepare a time-table for dialogues during activity selection, design and implementation processes, and consult them in manners so that they can express their views and preferences freely.
- In addition to the communities in general, consult community organizations, community elders/leaders and others with adequate gender and generational representation; and civil society organizations like NGOs and groups knowledgeable of issues related communities living within project area.
- Consultation will include the activity objectives and scope; the likely key adverse impacts on (and benefits for) communities; communities' own perception of the impacts and feedback; and a preliminary assessment of economic opportunities which the implementing agency could promote – in addition to mitigation of the adverse impacts.

- Consultation will in general concentrate on targeting and the adverse impacts perceived by the communities and the probable (and feasible) mitigation measures, as well as exploring additional development activities that could be promoted under the project.
- The implementing agency will keep Minutes of these consultation meetings in the activity files and make them available for inspection by World Bank, respective government officials and other interested groups and persons.
- If the presence of small ethnic communities is identified in the sub-project area, based on the baseline data appropriate social tool will be adopted using free, prior, informed consultation. This will serve as the basis for sub-project implementation and monitoring.

8.5.1 Information Disclosure (ESS10)

The mechanism of information dissemination should be simple and be accessible to all. Two of the important means that have been followed until now include briefing material and organization of community consultation sessions. The briefing material (all to be prepared in local language) can be in the form of (a) brochures (including project information, details of entitlements including compensation and assistance to be given to the PAPs; grievance mechanism) that can be kept in the offices of local self-government (gram parishad office) and project office; (b) posters to be displayed at prominent locations and (c) leaflets that can be distributed in the project areas. Consultation meetings should also be organized at regular intervals by the project to acquaint the communities, target group beneficiaries and affected persons of the following:

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

Also, opinion and consensus of the community needs to be sought for livelihood transformation, relocation of any community assets and involuntary resettlement management. Information disclosure procedures are mandated to provide citizen centric information as well as all documentation necessary for addressing any queries. Disclosure of information will enhance governance and accountability specifically with respect to strengthening of monitoring indicators to help the World Bank monitor compliance with the agreements and assess impact on outcomes.

Table 8.6: Disclosure Requirements

Topic	Documents to be Disclosed	Frequency	Where
Environmental and Social Impact Assessment; Resettlement, Rehabilitation and Land requirement	Initial Environmental Examination (IEE); Environmental and Social Impact Assessment (ESIA); Environmental and Social Management Plan; Resettlement Action Plan (RAP).	Once in the entire project cycle. But to remain on the website and other disclosure locations throughout the project period.	World Bank's website; On the website of LGED, The client would make the ESIA Report, ESMP, RAP available at a place accessible to displaced persons and local NGOs, in a form, manner, and language that are understandable to the stakeholders and PAPs in the following offices: UP Office Public Library if any Project Office
	Resettlement Policy Framework translated in local language	Once in the entire project cycle.	Distributed among Project Affected Persons (PAP)
	Information regarding impacts and their entitlements in local language	Once at the start of the project and as and when demanded by the PAP.	Through one-to-one contact with PAPs. Community consultation List of PAPs with impacts and entitlements to be pasted in the project office and website of LGED,
	R&R monthly progress report.	10th day of every month	Website of LGED. Hard copy in the project office
	RAP Impact Assessment Report	At midterm and end of the RAP implementation	LGED website in local language.

Topic	Documents to be Disclosed	Frequency	Where
Small ethnic communities (if any)	Small Ethnic Community Development Framework and Plans	Identification, design and implementation, monitoring and evaluation	LGED websites Hard copies in local language in the following offices: UP Office Project Office SECs to be informed on one to one contact
Public Consultation	Minutes of Formal Public Consultation Meetings	Within two weeks of meeting	On the web sites of LGED Hard copies in local language in the following offices: UP Office Project office
Grievance redressed process	Proceedings of grievance process/ monitoring reports	Continuous process throughout the project cycle.	On the web sites of LGED Hard copies in local language in the following offices: UP Office Project Office Beneficiaries and affected persons to be informed on one to one contact
Beneficiary identification and engagement	Approach and proceedings/long and short list of beneficiaries	Continuous process throughout the project cycle.	On the web sites of LGED Hard copies in local language in the following offices: UP Office Project Office Potential target group beneficiaries to be informed on one to one contact

8.5.2 Access to Information (ESS10)

The draft ESMF of WeCARE will be disclosed to the local and national level stakeholders through different methods as described below.

Workshop. A national workshop will be held at Dhaka to present the detailed project including safeguard aspects of WeCARE to the key stakeholders. In addition, stakeholders' meetings will be held at all selected upazilas to disclose the ToR and results of the IEE and ESIA. Representative of implementing authority, the study team, and the government officials from different departments, representatives from NGOs, local communities of different occupation, journalist, and local elite/civil society may attend the workshops. In the workshops, the participants will share their observations, views, and remarks with the study team. Appropriate suggestions and recommendations on different issues from the stakeholders of the meeting would be incorporated in the program specific IEE/ESIA. The workshops will also help to resolve conflicting issues among stakeholders. Besides, FGDs and personal interviews will be carried out at the all selected unions of the WeCARE project area to generate communities' views and concerns.

Publication in electronic and print media: The information on program interventions and the findings of environmental assessment would also be disclosed through newspapers and electronic media (e.g. internet, TV, radio, etc.). The report would be disclosed in Bengali language.

Availability of the Document: Summary of the IEE, ESIA and ESMF report along with ESMP will be translated into Bengali language and disseminated locally. The full report (in English) and the summary (in Bengali) will also be uploaded in the website of LGED and World Bank. Hard copy of the IEE, ESIA and ESMF will also be available at LGED District and Upazila offices of the program area.

Annexure

Annex A: Relevant national policies, strategies, plans, acts, rules and regulations of the GOB

Relevant National Environmental Acts and Rules

Constitution of the Government Republic of Bangladesh

In the constitutions of Bangladesh, the environmental issues also highlight the environmental protection and biodiversity conservation issues. In the Article18A: Protection and Improvement of Environment and Biodiversity; of the Constitution of the People's Republic of Bangladesh states that," The state shall endeavor to protect and improve the environment and to preserve and safeguard the natural resources, biodiversity, wetlands, forest and wildlife for the present and future citizens".

Bangladesh Environmental Conservation Act (ECA), 1995

The Environmental Conservation Act (ECA) of 1995 is the main legislative framework relating to environmental protection in Bangladesh. This umbrella Act includes laws for conservation of the environment, improvement of environmental standards, and control and mitigation of environmental pollution. This Act has empowered the Department of Environment (DoE), and its Director General to take measures as he considers necessary which includes conducting inquiries, preventing probable accidents, advising the Government, coordinating with other authorities or agencies, and collecting and publishing information about any environmental issue. According to this act (Section 12), no industrial unit or project shall be established or undertaken without obtaining, in a manner prescribed by the accompanying Rules, an Environmental Clearance Certificate (ECC) from the Director General of DoE.

Bangladesh Environmental Conservation Act (ECA), (Amendments) 2010

The ECA 1995 was amended in 2010, which provided clarification of defining wetlands as well as Ecologically Critical Areas and included many important environmental concerns such as conservation of wetlands, hill cutting, ship breaking, and hazardous waste disposal. This amendment empowered the government to enforce more penalties than before. Moreover, affected persons were given provision for putting objections or taking legal actions against the polluters or any entity creating nuisance to affected person.

Bangladesh Environmental Conservation Rules (ECR), 1997

The Environment Conservation Rules, 1997 were issued by the Government of Bangladesh in exercise of the power conferred under the Environment Conservation Act (Section 20), 1995. Under these Rules, the following aspects, among others, are covered:

- Declaration of ecologically critical areas
- Classification of industries and projects into four categories
- Procedures for issuing the Environmental Clearance Certificate
- Determination of environmental standards

The Rule 3 defines the factors to be considered in declaring an area 'ecologically critical area' (ECA) as per Section 5 of ECA95. It empowers the Government to declare an area 'ECA', if it is satisfied that the ecosystem of the area has reached or is threatened to reach a critical state or condition due to

environmental degradation. The Government is also empowered to specify which of the operations or processes shall not be carried out or shall not be initiated in the ecologically critical area.

The Rule 7 classifies industrial units and projects into four categories depending on environmental impact and location for the purpose of issuance of ECC. These categories are: Green, Orange A, Orange B, and Red.

All existing industrial units and projects and proposed industrial units and projects, that are considered to be low polluting are categorized under "Green" and shall be granted Environmental Clearance. For proposed industrial units and projects falling in the Orange-A, Orange-B and Red Categories, firstly a site clearance certificate and thereafter an environmental clearance certificate will be required. A detailed description of these four categories of industries has been given in Schedule-1 of ECR'97. Apart from general requirement, for every Red category proposed industrial unit or project, the application must be accompanied with feasibility report, Initial Environmental Examination (IEE), Environmental Impact Assessment (EIA) based on approved ToR by DoE, Environmental Management Plan (EMP).

The ECR'97 describes the procedures for obtaining Environmental Clearance Certificates (ECC) from the Department of Environment for different types of proposed units or projects. Any person or organization wishing to establish an industrial unit or project should obtain ECC from the Director General. The application for such certificate must be in the prescribed form together with the prescribed fees laid down in Schedule 13, through the deposit of a Treasury Challan in favor of the Director General. The fees for clearance certificates have been revised in 2010. Rule 8 prescribes the duration of validity of such certificate (three years for green category and one year for other categories) and compulsory requirement for renewal of certificate at least 30 days before expiry of its validity.

Bangladesh Environment Court Act, 2010

Bangladesh Environment Court Act, 2010 has been enacted to resolve the disputes and establishing justice over environmental and social damage raised due to any development activities. This act allows government to take necessary legal action against any parties who creates environmental hazards/ damage to environmentally sensitive areas as well as human society. According to this act, government can take legal actions if any environmental problem occurs due to WeCARE interventions.

LGED's Strategy, Guidelines and Environmental Code of Practices

In response to the ECA, 1995 and ECR, 1997, and recognizing the need of its donors to ensure sound environmental practices, LGED has developed guidelines and code of practices to ensure that its activities sustain, and where feasible enhance the environment. The LGED aims to implement all its projects in an environmentally sound and sustainable manner that meets all the requirements of the GOB and its financing partners. This approach is embodied in the LGED document on 'Environmental Assessment Guidelines for LGED Projects, LGED, October 2008'.

3.1.1 Relevant National Polices, Strategies and Plans in Bangladesh

National Environmental Policy, 1992

The National Environment Policy (NEP) is one of the key policy documents of the Government. The policy addresses 15 sectors in all, in addition to providing directives on the legal framework and institutional arrangements. Aquatic environment is one of the key sectors covered in this policy. Regarding fisheries resource sector, the policy seeks to:

- ensure conservation of fisheries and livestock, mangrove forest and others ecosystems and prevention of activities that diminish the wetlands and natural habitats for fishes are the basic objectives in this sector;

- ensure that Coastal and floodplain eco-systems are identified as potential areas for intervention, where all internal and external polluting activities should be stopped. Fishing in coastal and floodplain environment within regeneration limits is recommended;
- keep the rivers, canals, ponds, lakes, haors, baors and all other water bodies and water resources free from pollution;
- ensure sustainable, long-term, environmentally sound and scientific exploitation and management of the fisheries resources;
- ensure environmentally-sound utilization of all fisheries resources;
- ensure that water development activities and canal networks for aquaculture do not create adverse environmental impact;
- ensure that all steps are taken for construction of embankments, dredging of rivers, digging of canals, etc, be environmentally sound at local, zonal and national levels;
- ensure mitigation measures of adverse environmental impact of completed water resources development projects; and
- conduct environmental impact assessment before undertaking projects for fisheries resources development and management, as appropriate level.

National Environmental Management Action Plan, 1995

The National Environment Management Action Plan (NEMAP, 1995) identifies the main national environmental issues, including those related to the fisheries sector. The main fisheries related national concerns include environmental degradation of water bodies, increased water pollution, shortage of aquaculture water and drainage congestion; various specific regional concerns are also identified.

National Water Policy, 1999

Endorsed by the GoB in 1999, the National Water Policy (NWP) aims to provide guidance to the major players in water sector for ensuring optimal development and management of water. According to the policy, all agencies and departments entrusted with water resource management responsibilities (regulation, planning, construction, operation, and maintenance) are required to enhance environmental amenities and ensure that environmental resources are protected and restored in executing their tasks.

The policy has several clauses related to water resource development projects for ensuring environmental protection. Some of the relevant clauses are:

- Clause 4.5b: Planning and feasibility studies of all projects will follow the Guidelines for Project Assessment, the Guidelines for People's Participation (GPP), the Guidelines for Environmental Impact Assessment, and all other instructions that may be issued from time to time by the Government.
- Clause 4.9b: Measures will be taken to minimize disruption to the natural aquatic environment in streams and water channels.
- Clause 4.9e: Water development plans will not interrupt fish movement and will make adequate provisions in control structures for allowing fish migration and breeding.
- Clause 4.10a: Water development projects should cause minimal disruption to navigation and, where necessary, adequate mitigation measures should be taken.

- Clause 4.12a: Give full consideration to environmental protection, restoration and enhancement measures consistent with National Environmental Management Action Plan (NEMAP) and the National Water Management Plan (NWMP).
- Clause 4.12b: Adhere to a formal environment impact assessment (ESIA) process, as set out in ESIA guidelines and manuals for water sector projects, in each water resources development project or rehabilitation program of size and scope specified by the Government from time to time.
- Clause 4.13b: Only those water related projects will be taken up for execution that will not interfere with aquatic characteristics of those water bodies.

National Water Management Plan, 2001 (Approved in 2004)

The National Water Management Plan (NWMP) 2001, approved by the National Water Resources Council in 2004, envisions to establish an integrated development, management and use of water resources in Bangladesh over a period of 25 years. Water Resources Planning Organization (WARPO) has been assigned to monitor the national water management plan. The major programs in the Plan have been organized under eight sub-sectoral clusters: i) Institutional Development, ii) Enabling Environment, iii) Main River, iv) Towns and Rural Areas, v) Major Cities; vi) Disaster Management; vii) Agriculture and Water Management, and viii) Environment and Aquatic Resources. Each cluster comprises of a number of individual programs, and a total of 84 sub-sectoral programs have been identified and presented in the investment portfolio.

National Agriculture Policy, 1999

The overall objective of the National Agriculture Policy is to make the nation self-sufficient in food through increasing production of all crops including cereals and ensure a dependable food security system for all. The policy particularly stresses on research on the development of improved varieties and technologies for cultivation in water-logged and salinity affected areas. The policy also recognizes that adequate measures should be taken to reduce water-logging, salinity and provide irrigation facilities for crop production.

National Land Use Policy, 2001

The National Land Use Policy (NLUP), enacted in 2001, aims at managing land use effectively to support trends in accelerated urbanization, industrialization and diversification of development activities. The NLUP urges that increasing the land area of the country may be not possible through artificial land reclamation process, which is cost effective only in the long run. Therefore, land use planning should be based on the existing and available land resources. The policy suggests establishing land data banks where, among others, information on accreted riverine and coastal chars will be maintained. Among the 28 policy statements of NLUP, the following are relevant to WECARE:

- forests declared by the Ministry of Environment and Forests will remain as forest lands;
- re-classification of forest lands will be prevented.

The WeCARE will be designed in accordance with this Strategy and will comply with the above listed requirements.

National Fisheries Policy, 1998

The National Fisheries Policy (NFP), 1998 recognizes that fish production has declined due to environmental imbalances, adverse environmental impact and improper implementation of fish culture and management programs. The policy particularly focuses on aquaculture and open water fisheries development.

The policy suggests following actions:

- Enhancement of the fisheries production
- Poverty alleviation through creating self-employment and improvement of socio-economic conditions of the fishers
- Fulfill the demand for animal protein
- Achieve economic growth through earning foreign currency by exporting fish and fisheries products
- Chemicals harmful to the environment will not be used in fish shrimp farms
- Environment friendly fish shrimp culture technology will be used
- Expand fisheries areas and integrate rice, fish and shrimp cultivation
- Control measures will be taken against activities that have a negative impact on fisheries resources and vice-versa
- Laws will be formulated to ban the disposal of any untreated industrial effluents into the water bodies.

The Protection and Conservation of Fish Act (1950)

This Act provides power to the government to: make and apply rules to protect fisheries; prohibit or regulate erection and use of fixed engines; and construction of temporary or permanent weirs, dams, bunds, embankments and other structures. The Act prohibits: destruction of fish by explosives, guns, and bows in inland or coastal areas; destruction of fish by poisoning, pollution, or effluents. The Act prescribes the seasons during which fishing is allowed, prohibits fishing during spawning periods, and specifies officials having authority to detect breaches of this Act.

East Bengal Protection and Fish Conservation Act (1950) and Amendments

The East-Bengal Protection and Fish Conservation Act (1950), as amended by the Protection and Conservation of Fish (Amendment) Ordinance (1982) and the Protection and Conservation of Fish (Amendment) Act (1995), provides for the protection and conservation of fish in inland waters of Bangladesh. These instruments define a relatively non-specific framework that simply provides a means for Government to introduce rules to protect inland waters not in private ownership. Among other things, they sanction rulemaking regarding destruction of, or any attempt to destroy, fish by poisoning of water or depletion of fisheries by pollution, industrial effluent, or otherwise.

Protection and Conservation of Fish Rules (1985)

These Rules are in line with the overall objectives of the Fisheries Act and its amendments. Section 5 of the Rules states that, “No person shall destroy or make any attempt to destroy any fish by explosives, gun, bow and arrow in inland waters or within coastal waters”. Section 6 states, “No person shall destroy or make any attempt to destroy any fish by poisoning of water or the depletion of fisheries by pollution, by trade effluents or otherwise in inland waters.

National Livestock Development Policy, 2007

The National Livestock Development Policy (NLDP) has been prepared to address the key challenges and opportunity for a comprehensive sustainable development of the livestock sub-sector by creating an enabling policy framework. As livestock is one of the key assets in livelihoods of the program area, and protection of livestock from floods should be emphasized along with security of human life. The proposed

WeCARE interventions will contribute to the safety of livestock and thus increase livestock productivity in the program area as source of alternative livelihood.

Private Forest Policy, 1994

The policy suggested for extended effort to bring about 20% of the country's land under the afforestation programs of the government and private sector by year 2015 by accelerating the pace of the program through the coordinated efforts of the government and NGOs and active participation of the people in order to achieve self-reliance in forest products and maintenance of ecological balance. The policy viewed equitable distribution of benefits among the people, especially those whose livelihood depend on trees and forests; and people's participation in afforestation programs and incorporation of people's opinions and suggestions in the planning and decision-making process. The people centered objectives of the policy are: creation of rural employment opportunities and expansion of forest-based rural development sectors; and prevention of illegal occupation of forest lands and other forest offences through people's participation. The policy statements envisage: massive afforestation on marginal public lands through partnerships with local people and NGOs; afforestation of denuded/encroached reserved forests with an agro-forestry model through participation of people and NGOs; giving ownership of a certain amount of land to the tribal people through forest settlement processes; strengthening of the Forest Department; strengthening of educational, training and research facilities; and amendment of laws, rules and regulations relating to the forestry sector and if necessary, promulgation of new laws and rules. Thus, over time the policy has shifted somewhat from total state control to a management regime involving local communities in specific categories of forests. Because of limited amount of forestland, the policy underscores for effective measures for afforestation in rural areas, in the newly accreted chars, and in the denuded Unclassed State Forest areas of Chittagong Hill Tract and northern zone of the country including the Barind tract. The policy also encourages the private sector participation in afforestation.

National Policy for Safe Water Supply and Sanitation, 1998

The National Drinking Water Supply and Sanitation Policy (1998) goal is accessibility to all of water and sanitation services within the shortest possible time at a price that is affordable to all. The Policy will be achieved through strategies formulated at various levels in consultation with the Ministry of Planning. Policy objectives are (i) to improve the standard of public health and (ii) to ensure an improved environment. Policies for rural and urban areas are presented separately as they differ in institutional aspects, content, and magnitude.

National Adaptation Program of Action (NAPA), 2005

In 2005, the Ministry of Environment and Forest (MoEFCC), Government of the People’s Republic of Bangladesh has prepared the National Adaptation Program of Action (NAPA) for Bangladesh, as a response to the decision of the Seventh Session of the Conference of the Parties (COP7) of the United Nations Framework Convention on Climate Change (UNFCCC). The basic approach to NAPA preparation was along with the sustainable development goals and objectives of the country where it has recognized the necessity of addressing climate change and environmental issue and natural resource management. The NAPA is the beginning of a long journey to address adverse impacts of climate change including variability and extreme events and to promote sustainable development of the country. There are 15 adaptation strategies suggested to address adverse effects of climate change.

Bangladesh Climate Change Strategy and Action Plan (BCCSAP), 2009

The Government of Bangladesh has prepared the Bangladesh Climate Change Strategy and Action Plan (BCCSAP), 2009. The BCCSAP is built on six pillars:

i. **Food security, social protection and health** to ensure that the poorest and most vulnerable in society, including women and children, are protected from climate change and that all programs focus on the needs of this group for food security, safe housing, employment and access to basic services, including health.

ii. **Comprehensive disaster management** to further strengthen the country's already proven disaster management systems to deal with increasingly frequent and severe natural calamities.

iii. **Infrastructure** to ensure that existing assets (e.g., coastal and river embankments) are well maintained and fit for purpose and that urgently needed infrastructures (cyclone shelters and urban drainage) is put in place to deal with the likely impacts of climate change.

iv. **Research and Knowledge management** to predict that the likely scale and timing of climate change impacts on different sectors of economy and socioeconomic groups; to underpin future investment strategies; and to ensure that Bangladesh is networked into the latest global thinking on climate change.

v. **Mitigation and low carbon development** to evolve low carbon development options and implement these as the country's economy grows over the coming decades.

vi. **Capacity building and Institutional strengthening** to enhance the capacity government ministries, civil society and private sector to meet the challenge of climate change.

National Strategy for Waste Management

The strategy for solid waste management is essential in order to minimize the environmental, social and economic problems. To minimize these problems, recently the GoB has taken some initiatives and accordingly in December 2010, the DoE under MoEFCC has formulated a national '3R' strategy for waste management in a draft form. It is the latest strategy which will take time to implement globally. For the proposed project, the '3R' strategy shall be followed to minimize the waste impact on environment.

The concept of this strategy is minimizing waste impacts in terms of quantity or ill-effects, by reducing the quantity of waste products with simple treatments and recycling the wastes by using it as resources to produce same or modified products. The principle of '3R' is stated as reducing waste, reusing and recycling resources and products.

- Reducing means choosing to use with items with care to reduce the amount of waste generated.
- Reusing involves the repeated use of items or parts of items which still have usable aspects
- Recycling means the use of waste itself as resources.

The GoB Seventh Five Year Plan 2016-2020

The GoB approved 7th Five Year Plan (2016-20) in October 2015 aiming to empower people by creating employment and skill development opportunities, supplying credit for SME development and many other ways for people to be more productive. Along with growth, the Plan will emphasize social protection, urban transition and a sustainable development pathway resilient to disaster and climate change.

The Seventh five year plan has also adopted following major policies and policy actions for environment sustainability:

- Increase productive forest coverage to 20 percent;
- Improve air quality in Dhaka and other large cities and enact Clean Air Act;
- Promote Zero discharge of industrial effluents;

- Urban wetlands are restored and protected in line with Wetland Conservation Act;
- At least 15% of the wetland in peak dry season is protected as aquatic sanctuary;
- 500 meter wide permanent green belt established and protected along the coast;
- Land zoning for sustainable land/water use completed;
- Environmental, Climate Change and disaster risk reduction considerations are integrated into project design, budgetary allocations and implementation process; and
- Canals and natural water flows of Dhaka and other major cities restored.

Bangladesh Delta Plan 2100

Bangladesh Delta Plan 2100 is the most comprehensive and holistic plan ever formulated and undertaken by the Government of Bangladesh. Considering the exceptionally strong development record throughout the last decade, aspirations to reach the Upper Middle Income (UMIC) country status level by 2030 and so many development challenges still persisting including huge population pressure and climate change vulnerability, the government has formulated this plan in order to reap the synergistic benefit from all actions, activities, plans, strategies and programs of all different ministries and wings of the government. This Delta Plan has divided Bangladesh into 8 hydrological regions and corresponding six Hotspots based on the similar vulnerabilities they are exposed to. With the grim effects of climate change and other delta related challenges, the country is facing more other challenges from growing urbanization, declining land availability, infrastructure shortages, energy supply constraints and labor skills, and all these challenges also need an overarching solution or efforts far more than sectoral plans or programs. Delta plan comes up with all these effective efforts with numbers of long and short term course of actions and plans. Among many others, following specific issues are considered more holistically in Delta Plan 2100:

- Climate Change, Environment and Ecological Issues,
- National and Trans-boundary water management
- Sustainable land use and Spatial Planning across dynamic delta
- Sustainable agriculture, food security, nutrition and livelihoods
- Dynamizing Inland Water Transport system
- Urban Water Management
- Governance and Institutions
- Delta Knowledge hub and data management, etc.

Other Relevant Acts, Laws and Rules

Bangladesh Wildlife (Protection and Preservation) Act 2012

The Act protects 1,307 species of plants and animals, including 32 species of amphibian, 154 species of reptile, 113 species of mammal, 52 species of fish, 32 species of coral, 137 species of mollusk, 22 species of crustacean, 24 species of insect, six species of rodent, 41 species of plant and 13 species of orchid. Of these, eight amphibian, 58 reptile, 41 bird, and 40 mammal species are listed as endangered in the IUCN Red Data Book (2000). The Act mandates:

- one to three years imprisonment, a fine of BDT 50,000 to 200,000, or both, for wildlife poaching, capturing, trapping, and trading, and for the purchase of wild animals, parts of wild animals, trophies, meat or other products without license.

- The Act mandates two to seven years imprisonment and BDT 100,000 to 1 million fine or both, for killing an elephant or tiger; and 12 years plus BDT 1.5 million for repeat offenders.
- five years imprisonment and BDT 200,000 fine for killing a cheetah, clouded cheetah, gibbon, sambar deer, crocodile, gavial, whale, and dolphin.
- two years imprisonment and BDT 200,000 fine for killing a wild bird or migratory bird.
- empowers the Government to create an eco-park, safari park, botanical garden, or breeding ground on any state-owned forest land, land or water-body.
- two years imprisonment for farming, woodcutting, burning, and construction on such reserves.

Bangladesh Wildlife (Preservation) Order (1973) and Act (1974)

The Bangladesh Wildlife Preservation (Amendment) Act 1974 regulates the hunting, killing, capture, trade and export of wild life and wild life products. It designates a list of protected species and game animals. It empowers the Government to declare areas as game reserves, wildlife sanctuaries, and national parks to protect the country's wildlife and provides the following legal definitions:

- Game reserve is defined as an area declared by Government wherein the capture of wild animals is unlawful, to protect wildlife and increase the population of important species;
- National park is defined as an area declared by Government comprising a comparatively large area of outstanding scenic and natural beauty with the primary objective of protection and preservation of scenery, flora, and fauna in their natural state, to which access for public recreation and education, and for scientific research, may be allowed;
- Wildlife sanctuary is defined as an area declared by Government that is closed to hunting, shooting, or trapping of wild animals as an undisturbed breeding ground, primarily for the purpose of protecting all natural resources, including wildlife vegetation, soil, and water.

The Act allows Government to relax any or all specified prohibitions for scientific purposes, for aesthetic enjoyment, or betterment of scenery.

Biodiversity Act, 2017

Biodiversity Act, 2017 fulfils the obligation of the state as party to the Convention on Biodiversity to provide for conservation of biodiversity, sustainable use of its components and fair and equitable sharing of benefits arising from their use. It provides for the creation of the National Committee and the Biodiversity Management and Surveillance Committees at local levels (i.e. Districts, Upazilas, Municipalities, and Unions). In general, all these committees are mandated to: assist the Government in implementing the National Biodiversity Strategy and Action Plan (NBSAP) and to visit the biodiversity enriched areas in their respective territories; and, monitor the progress of implementation of the NBSAP. They are also mandated to raise awareness among the local people on conservation of biodiversity and to recommend the National Committee for required measure. Under the Biodiversity Act, the Government is empowered to declare, in consultation with local communities and bodies and in coordination with concerned ministries or departments, any place or area significant for its biological heritage as Biodiversity Heritage Sites. The Government may initiate projects or schemes for compensating or rehabilitating any person or institution economically affected by such declaration. The Government may frame directives for the management and conservation of all the Biodiversity Heritage Sites. Interestingly, while the CBD calls for financial assistance to developing countries, the Biodiversity Act provides for a domestic fund called the 'Biodiversity Conservation Fund'. Any grants given by the Government and money obtained from any other sources, subject to the approval of the government, will be credited to the Fund. The Fund will be utilized for the conservation and management of Biodiversity Heritage Sites,

compensating or rehabilitating any person or section of the people economically affected by the declaration of Biodiversity Heritage Sites and for any other incidental expenses.

Forestry Acts, 1860s

Systematic management of forests started in the 1860s after the establishment of a Forest Department in the Province of Bengal. To regulate activities within forests, rules and regulations have been formulated, amended, modified and improved upon over the years. These rules and regulations are formulated on the basis of long-existing acts and policies.

Forest legislation in Bangladesh dates back to 1865, when the first Indian Forest Act was enacted. It provided for protection of tree, prevention of fires, prohibition of cultivation, and grazing in forest areas. Until a comprehensive Indian Forest Act was formulated in 1927, several acts and amendments covering forest administration in British India were enacted and were as follows: (a) Government Forest Act, 1865; (b) Forest Act, 1890; (c) Amending Act, 1891; (d) Indian Forest (Amendment) Act, 1901; (e) Indian Forest (Amendment) Act, 1911; (f) Repealing and Amending Act, 1914; (g) Indian Forest Amendment Act, 1918; and (h) Devolution Act, 1920.

The Forest Act of 1927, as amended with its related rules and regulations, is still the basic law governing forests in Bangladesh. The emphasis of the Act is on the protection of reserved forest. Some important features of the Act are: (i) Under the purview of the Forest Act, all rights or claims over forestlands have been settled at the time of the reservation. The Act prohibits the grant of any new rights of any kind to individuals or communities; (ii) Any activity within the forest reserves is prohibited, unless permitted by the Forest Department; (iii) Most of the violations may result in court cases where the minimum fine is Taka 2,000 and/or two month's rigorous imprisonment; and (iv) The Act empowers the Forest Department to regulate the use of water-courses within Reserve Forests.

Forest Act 1927 (Amendment 2000)

The Forest Act of 1927 as amended in 1989 has its roots in Indian Forest Act, 1878. The Forest Act grants the government several basic powers, largely for conservation and protection of government forests, and limited powers for private forests. The 1927 version of the act was amended in 1989 for extending authority over "any [Government-owned] land suitable for afforestation".

Forest department is the main agency to implement the provisions of the Forest Act. The Act, however, does not specify any sort of institutional structure for the forest or other land holding agencies. It also does not set out any specific policy direction for managing the forests.

Most of the forest lands under the management of forest department are areas declared to be reserved and protected forests under this act. The act empowers the government to regulate the felling, extraction, and transport of forest produce in the country.

Private Forest Act (PFA), 1959

The Private Forest Act of 1959 allows the Government to take over management of improperly managed private forest lands, any private lands that can be afforested, and any land lying fallow for more than three years. The Private Forest Ordinance was originally enacted in 1945, as the Bengal Private Forest Act, and was re-enacted by the Bangladesh (then East Pakistan) in 1949 before being issued as an Act in 1959. These government managed lands under this act are called "vested forests". The Forest Department manages approximately 8,500 ha in the country as "vested forests". This area is relatively small, but the area historically affected by this law is much larger.

PFA, 1959 empowers the government to require management plans for private forests and to assume control of private forests as vested forests. Government has broad powers to write rules regarding use

and protection of vested forests, and apply rules to "controlled forests," which include all private forests subject to any requirement of the Act.

Embankment and Drainage Act, 1952

The East Bengal Act No. 1, 1953 has been adapted by the People Republic of Bangladesh, by the Bangladesh Order (adaptation of Existing Laws), 1972 (President's Order No. 48 of 1972). The Act consolidates the laws relating to embankments and drainage providing provision for the construction, maintenance, management, removal and control of embankments and water courses for the better drainage of lands and for their protection from floods, erosion or other damage by water.

Bangladesh Water Act, 2013

The recently published Water Act 2013 is based on the National Water Policy, and designed for integrated development, management, extraction, distribution, usage, protection and conservation of water resources in Bangladesh. In general, if one takes a critical look at the Act, the new law has provided the right framework for better management of water resources in the country.

As per this Act, all forms of water (e.g., surface water, ground water, sea water, rain water and atmospheric water) within the territory of Bangladesh belong to the government on behalf of the people. The private landowners will be able to use the surface water inside their property for all purposes in accordance with the Act. A worthwhile initiative is the requirement for permits/licenses for large scale water withdrawal by individuals and organizations beyond domestic use. Without prior permission issued by the Executive Committee, no individuals or organizations will be allowed to extract, distribute, use, develop, protect, and conserve water resources, nor they will be allowed to build any structure that impede the natural flow of rivers and creeks. However, the maximum amount of surface water or groundwater that can be withdrawn by individuals or organizations is not mentioned in the Act. Setting up a priority order for water usage in an area where the water resources is in critical condition is also a significant step.

Bangladesh Labour Act, 2006

The Bangladesh Labor Act, 2006 provides the guidance of employer's extent of responsibility and workmen's extent of right to get compensation in case of injury by accident while working. Some of the relevant Sections are:

- Section 150. Employer's Liability for Compensation: (1) If personal injury is caused to a workman by accident arising out of and in the course of his employment, his employer shall be liable to pay compensation in accordance with the provisions of this Act; and (2) Provided that the employer shall not be so liable in respect of any injury which does not result in the total or partial disablement of the workman for a period exceeding three days; (b) in respect of any injury, not resulting in death or permanent total disablement, caused by an accident which is directly attributable to - (i) the workman having been at the time thereof under the influence of drink or drugs, or (ii) the willful disobedience of the workman to an order expressly given, or to a rule expressly framed, for the purpose of securing the safety of workmen, or (iii) the willful removal or disregard by the workman of any safety guard or other device which he knew to have been provided for the purpose of securing the safety of workmen.
- Section 151. (1) Amount of Compensation: Subject to the provisions of this Act, the amount of compensation shall be as follows, namely :- (a) where death results from the injury, an amount equal to fifty cent of the monthly wages of the deceased workman multiplied by the relevant factor; or an amount of fifty thousand taka, whichever is more; (b) where permanent disablement results

from the injury an amount equal to sixty per cent of the monthly wages of the injured workman multiplied by the relevant factor.

Bangladesh National Building Code, 2006

The Bangladesh National Building Code (BNBC) clearly sets out the constructional responsibilities according to which the relevant authority of a particular construction site shall adopt some precautionary measures to ensure the safety of the workmen. According to Section 1.2.1 of Chapter 1 of Part 7, "In a construction or demolition work, the terms of contract between the owner and the contractor and between a consultant and the owner shall be clearly defined and put in writing". These however will not absolve the owner from any of his responsibilities under the various provisions of this Code and other applicable regulations and bye-laws. The terms of contract between the owner and the contractor will determine the responsibilities and liabilities of either party in the concerned matters, within the provisions of the relevant Acts and Codes (e.g.) the Employers' Liability Act, 1938, the Factories Act 1965, the Fatal Accident Act, 1955 and Workmen's Compensation Act 1923". (After the introduction of the Bangladesh Labor Act, 2006, these Acts have been repealed.)

The BNBC also stipulates the general duties of the employer to the public as well as workers. According to this section, "All equipment and safeguards required for the construction work such as temporary stair, ladder, ramp, scaffold, hoist, run way, barricade, chute, lift shall be substantially constructed and erected so as not to create any unsafe situation for the workmen using them or the workmen and general public passing under, on or near them".

The Code also clarifies the issue of safety of workmen during construction and with relation to this, set out the details about the different safety tools of specified standard. In relation with the health hazards of the workers during construction, this chapter describes the nature of the different health hazards that normally occur in the site during construction and at the same time specifies the specific measures to be taken to prevent such health hazards. According to this chapter, exhaust ventilation, use of protective devices, medical checkups etc. are the measures to be taken by the particular employer to ensure a healthy workplace for the workers.

To prevent workers falling from heights, the Code sets out the detailed requirements on the formation and use of scaffolding. According to Section 3.9.2 of the same chapter, "every temporary floor openings shall either have railing of at least 900 mm height or shall be constantly attended". Every floor hole shall be guarded by either a railing with toe board or a hinged cover. Alternatively, the hole may be constantly attended or protected by a removable railing. Every stairway floor opening shall be guarded by railing at least 900 mm high on the exposed sides except at entrance to stairway. Every ladder way floor opening or platform shall be guarded by a guard railing with toe board except at entrance to opening. Every open sided floor or platform 1.2 meters or more above adjacent ground level shall be guarded by a railing on all open sides except where there is entrance to ramp, stairway or fixed ladder, the above precautions shall also be taken near the open edges of the floors and the roofs".

The Noise Pollution Control Rules, 2006

The Noise Pollution Control Rules have been established in order to manage noise generating activities which have the potential to impact the health and wellbeing of workers and the surrounding communities. Under this legislation, control zones are listed as:

- Quiet Area – for example school or hospital;
- Residential Area – an area primarily occupied by dwellings;
- Mixed Area – area with a mix of residential, commercial and industrial land uses;

- Commercial Area – an area primarily occupied by businesses and officers; and
- Industrial Area – and area used for industry or manufacturing.

Day-time and night-time noise level restrictions are provided for these areas. Additionally, limits are provided for noise emissions from motor vehicles and boats.

National Land Transport Policy (NLTP), 2004

The government approved the NLTP in April 2004, which introduced the concept of long-term network planning and integration of transport policy, planning and appraisal across land transport modes. Each sub-sector undertakes physical and institutional improvement in line with its long-term policy provided in the NLTP with each sub-sector master plan. Major issues by sub-sector include (i) maintenance financing, quality, safety and overloading in major roads; (ii) better planning in rural roads; (iii) restructuring Bangladesh Railways into a commercially oriented organization in conjunction

with substantial investment in infrastructure, rolling stocks and wagons, equipment, and technical modernization; (iv) efficient dredging and tariff regulation in inland waterways; and (v) operation efficiency improvements in ports. As indicated in the NLTP, environmental adaptation needs to be taken into account in project assessment, which will help mitigate climate change.

Vehicle Act, 1927, the Motor Vehicle Ordinance 1983

Key features of the vehicle act, 1927, the motor vehicle ordinance 1983 is as follows:

- Exhaust emission;
- Vehicular air and noise pollution;
- Road/traffic safety;
- Vehicle Licensing and Registration;
- Fitness of Motor Vehicles;
- Parking by laws.

Road Transport Act 2018

The new Road Transport Act 2018 has finally come into effect at the start of November. After the long-standing Motor Vehicle Ordinance of 1983, the new act introduces a myriad of updated laws and adds new definitions for what constitutes an offence, with most of the fines and punishments receiving major bumps. Here is a brief analysis and overview of some of the more noticeable changes. Of all the new things in this act, two stand out the most. Firstly, all licenses now carry 12 points. Nine types of traffic violations—such as speeding or excessive honking—will result in a point being awarded to a license. If a license reaches 12 points, it will be revoked. Secondly, the introduction of an academic requirement dictates the applicant has to at least pass class eight before applying for a driving license.

Another change that will surely hurt all car users is the update to the “alteration to motor vehicles” section. The previous Section 42 was left vague and only had a TK 5,000 fine. In the new act, Section 40 replaces Section 42 and brings in 18 different classifications, in which modifications to a car is punishable by a fine of up to TK 3 lakh. These classifications include both front and rear overhangs (the basic dimensions of the car)—meaning technically, the all too common steel bumper additions found in most of the cars is a crime under this law. Along with that, aftermarket exhausts, bigger wheels, modified horns, indicators, brakes and more, all fall under the “illegal modification” classification.

Section 105 of 11th chapter states no matter what, if anybody gets seriously injured or killed in a motor vehicle-related accident, it would be considered as an offence under the relevant sections of the Penal Code, 1860. This ranges from Section 302 to 304B, with the maximum punishment being a death sentence. The offences that fall under section 105 of the act are not eligible for bail.

The Brick Burning (control) Act, 1989

This Act has been promulgated to control the process of brick burning. This requires operators to obtain a license from the appropriate authority (DC) before the commencement of brick burning. The Act restricts brick burning with fuel wood and categorically mentions that no one is permitted to use fuel wood for brick burning. The Act has a provision of punitive measures of imprisonment for six months or a fine of Taka Fifty thousand only or both. The Act also provides for inspection of the brick fields to check the use of fuel wood and the inspecting authority has the right to confiscate all the bricks and fuel wood found on the particular brickfield.

Brick Burning (control) (Amendment) Act 1992

This Act was promulgated in July 1992 and was intended to amend certain elements of the Act of 1989. The two major issues requiring special mention in this regard is the shifting of authority from the UP Chairman to the DC and the re-definition of fuel. In this Act the definition of fuel is any floral based fuel other than the dead (motha) of the bamboo. The Act replaces the definition of fuel wood enunciated in the earlier act with this fuel.

Other Laws

There are a number of other laws and regulations applicable which are relevant for the WeCARE. These are presented in the table below.

Table: Other Relevant Laws and Acts

Act/Law/Ordinance	Brief Description	Responsible Agency
The Vehicle Act (1927) and the Motor Vehicles Ordinance (1983)	Provides rules for exhaust emission, air and noise pollution and road and traffic safety	Road Authority
Rules for Removal of Wrecks and Obstructions in inland Navigable Water Ways (1973)	Rules for removal of wrecks and obstructions	IBWTA
The Water Supply and Sanitation Act (1996)	Regulates the management and control of water supply and sanitation in urban areas.	MoLG, RD&C
The Ground Water Management Ordinance (1985)	Describes the management of ground water resources and licensing of tube wells	Upazila Parishad
The Private Forests Ordinance (1959)	Deals with the conservation of private forests and afforestation of wastelands.	MoEFCC
The Antiquities Act (1968)	Describes the preservation of cultural heritage, historic monuments and protected sites	DoArch

Review of National Social Regulatory Framework

This section deals with the laws, regulations and policies, of Government of Bangladesh, and the World Bank, related to social issues. Only the laws, regulations and policies relevant to the project are discussed here. This section needs to be updated as when new laws, regulations and policies are made and enforced or the existing ones are revised.

Relevant National Social Policy, Acts, Plans and Rules

Constitutional Provisions

The fundamental rights under the Constitution indicate the general guidelines for a policy on resettlement/rehabilitation of citizens adversely affected (whatever be the mechanism) due to any activity of the State. Article 40 of the constitution states categorically that every citizen has the right to practice any lawful occupation which implies that anything impeding such right (a) should not be done or (b) there should be supplementary measures to make recovery of the losses incurred by the citizen. Resettlement and rehabilitation of adversely affected people due to infrastructure projects very clearly falls within this requirement for supplementary measures. However, as per Article 42, sub-clause 2, no law with provision of compensation for acquisition of land can be challenged in a court on the ground that such compensation has been inadequate.

The Acquisition and Requisition of Immovable Property Act 2017

The principal legal instrument governing land acquisition in Bangladesh is the Acquisition and Requisition of Immovable PropertyOrdinance,1982 (Ordinance II of 1982 with amendments upto1994), which recently replaced by the new law (Act 21 of 2017) and other land laws and administrative manuals relevant to land administration in Bangladesh. According to the Act and the formal Ordinance, whenever it appears to the Government of Bangladesh that any property in any locality is needed or is likely to be needed for any public purpose or in the public interest, the Government can acquire the land provided that no property used by the public for the purpose of religious worship, graveyard and cremation ground. The1982 Ordinance/Act 21 of 2017 requires that compensation be paid for (i) land and assets permanently acquired (including standing crops, trees, houses); and (ii) any other damages caused by such acquisition. The Deputy Commissioner (DC) determines (a) market value of acquired assets on the date of notice of acquisition (based on the registered value of similar property bought and/or sold in the area over the preceding 12 months), and (b) 200% premium on the assessed value for land and 100% for non-land assets on the land due to compulsory acquisition. There are also provisions for payment of crop compensation to tenant cultivators.

The law specifies methods for calculation of market value of property based on recorded prices obtained from relevant Government departments such as Registrar (land), Public Works Department (structures), Department of Forest (trees), Department of Agriculture (crops) and LGED (fish stock). Given that people devalue land during title transfer to minimize tax payment, compensation for land paid by DC including premium largely remains less than the actual market price.

The Ministry of Land (MoL) is authorized to deal with land acquisition. The MoL delegates some of its authority to the Commissioner at Divisional level and to the Deputy Commissioner at the District level. The Deputy Commissioners (DCs) are empowered by the MoL to process land acquisition under the Ordinance and pay compensation to the legal owners of the acquired property. Khas (government owned

land) lands should be acquired first when a project requires both khas and private land. If a project requires only khas land, the land will be transferred through an inter-ministerial meeting following the acquisition proposal submitted to DC or MoL as the case may be. The DC is empowered to acquire a maximum of 50 standard bigha (6.75 ha) of land without any litigation where the Divisional Commissioner is involved for approval. Acquisition of land more than 50 standard bigha is approved from the central land allocation committee (CLAC) headed by the chief executive of the Government of Bangladesh proposed by the MoL.

The land owner needs to establish ownership by producing record-of-rights in order to be eligible for compensation under the law. The record of rights prepared under 4.143 or144 of the State Acquisition and Tenancy Act 1950 (revised 1994) are not always updated and as a result, legal land owners have faced difficulties trying to "prove" ownership. The affected person (AP) has also to produce rent receipt or receipt of land development tax, but this does not assist in some situations as a person is exempted from payment of rent if the area of land is less than 25 bighas (3.37 ha).

The Transfer of Property Act of 1882 (Act No. IV of 1882)

The Act relates to transfer of properties. It came into force on the first day of July, 1982. The Act defined any transaction relating to immovable property is required by law to be and has been effective by registered instruments. According to the Act No. IV of 1882, donor can transfer his/their property for the benefit of the public in the advancement of religion, knowledge, commerce, health, safety, or any other object beneficial to mankind and the transfer must be effective by registration.

Property (Emergency) Acquisition Act, 1989

The Act was formulated to expedite the emergency acquisition of land to enable the Government 'to control inundation, flood and upsurge caused by natural calamity and to prevent river erosion. The 1989 Act was not meant to replace the 1982 Ordinance, but to complement it for special circumstances. Normally, acquisition of land for development purposes would not come under the 1989 Act. Use of this Act to acquire land for development would require extremely compelling reasons.

Framework for leasing of Government (Khas) agricultural land

The rules for managing and leasing Government-owned (Khas) land are notified through two Bangladesh Gazette notifications i.e.: (1) Notification: Bhumo/Sha-8/Kha-jo-bo/46/84/261, Bangladesh Gazette Extra Edition dated May 12, 1997, pp 1527-1536; and (2) Notification: Shuno/Sha-4/Kri-kha-jo--bo-1/98-264, Bangladesh Gazette, September 15, 1998. Under these regulations, the Government leases cultivable agricultural land in the rural areas to landless farming households. The allotments cannot be more than one acre, except in the southern districts where up to 1.5 acres of char land can be allotted. The regulation further defines structure and responsibilities for management and leasing of Khas Lands at the National, District, and Thana levels.

Constitutional Rights of the Small Ethnic Communities

The Constitution of Bangladesh does not mention the existence of the cultural and ethnic minorities in Bangladesh. The only protective provision for the ethnic minorities that the policy makers often refer to is Article 28(4) which states that: Nothing shall prevent the state from making special provision in favour

of women and children or for the advancement of any backward citizens. The above provision is an ambiguous one and it does not define who or what constitutes "backward". However, the Government recognizes existence of “Small Ethnic Communities” (SECs) and the need for special attention and in general SECs are essentially viewed as backward, poor and socio-economically and culturally inferior. Towards this end a special program was initiated in 1996-97 by the Prime Minister’s Secretariat aimed at improving the socio-economic situation of the SECs of Bangladesh, resident outside the Chittagong Hill Tracts (CHT).

The Chittagong Hill Tracts Regulation 1900

The CHT Regulation, 1900 (Regulation I of 1900) is the regulatory framework for State sovereignty over the traditional rights of the SECs living in the CHTs region. They are governed through Revenue Circle Chiefs who are local revenue collectors vide an amalnama (authorization by the Government). The Deputy Commissioner and the Commissioner from the Central Government reserve the authority to settle land to the hill-men or non-hill residents or lease out land (non-transferable) for rubber plantation or establishing industries in the CHTs. The regulation provides the right to possessing cultivable land upto 5 acres by hill men or non-hill residents. The headman is responsible for the conservation of the resources of his mouza through exercising his authority to (i) prohibit the removal of forest produces by residents of respective mouzas other than for their domestic purposes or by non-residents for any purpose, (ii) exclude any area or areas in his mouzas from the jhuming (shifting cultivation), (iii) prevent new comers from cutting jhums in his mouza, and (iv) prevent a person from grazing cattle in his mouza.

The Chittagong Hill–Tracts (Land Acquisition) Regulation, 1958

Most of the land in CHT belongs to the Government either as reserve forest or as unclassified state forest. The CHT Regulation I of 1900 was the sole legal instrument for the governance and administration of the Hill Tracts. Under the regulation, the DC could resume land even though settlement of the same might have been given earlier. The rule prescribed payment of compensation for various interests as in the case of land acquisition. In order to expedite the acquisition of land in CHT, the Government made the CHTs (Land Acquisition) Regulation, 1958. This regulation has provision for payment of compensation for requisitioned property. The compensation may be fixed by agreement or by rules framed on this behalf.

The CHT Regional Council Act, 1998

The National Parliament of Bangladesh in 24 May1998 passed the Peace Accord 1997 as the “CHTs Regional Council Act, 1998 (Act 12 of 1998). In addition to re-establishing peace, the Accord recognized the ethnic people’s right to land, culture, language, and religion. The Accord set out detailed provisions for strengthening the system of self-governance in the CHT, and redressing the most urgent land-related problems including resolution of land disputes by a commission on land, the transfer of authority for land administration to the hill district councils (HDCs), the cancellation of lease granted to non-residents during the conflict period, the distribution of land to ethnic or “SECs” villages, and the strengthening of customary land rights. Under this Act, no lands, hills and forests within the control and jurisdiction of the HDCs shall be acquired or transferred by the government without consultation and consent of the Regional Council. No law will be executed in the region which is not developed and enacted in consultation and agreement with the SECs peoples in CHT. A ministry on CHT Affairs was established by appointing a Minister from among the SECs (communities of hill districts). An Advisory Council from the CHT region assists this ministry.

The Labor Act, 2006

Compensation for death and injury. Section 99 of the Labor Act, 2006, read with the Compensation Act 2005, makes it compulsory for there to Group Insurance for establishments where there are more than 200 permanent workers. A worker is defined as:

“any person, including an apprentice, employed in any establishment or industry, either directly or through a contractor, to do any skilled, unskilled, manual, technical, trade, promotional or clerical work for hire or reward, whether the terms of his employment are expressed or implied, but does not include a person employed mainly in a managerial or administrative capacity.”

The Labor Act allows workers to claim Tk. 1,00,000 and Tk. 1,25,000 for death and permanently total disablement at work respectively, or in other words, the same compensatory sums as set out in the Labor Act.

For compensating a worker who suffered injury or lost life, The LGED follows 2006 Labor Law. However, LGED has taken initiative for enacting a new policy/law in this regard which is under process (2017).

Annex B: WB Environmental and Social Standards (ESSs)

ESS 1: Assessment and Management of Environmental and Social Risks and Impacts

ESS1 sets out the LGED's responsibilities for assessing, managing and monitoring environmental and social risks and impacts associated with each stage of a project supported by the Bank through Investment Project Financing, in order to achieve environmental and social outcomes consistent with the Environmental and Social Standards (ESSs).

Objectives of the ESS1

- To identify, evaluate and manage the environment and social risks and impacts of the project in a manner consistent with the ESSs.
- To adopt a mitigation hierarchy approach to:
    - Anticipate and avoid risks and impacts;
    - Where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels;
    - Once risks and impacts have been minimized or reduced, mitigate; and
    - Where significant residual impacts remain, compensate for or offset them, where technically and financially feasible.
- To adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and they are not disadvantaged in sharing development benefits and opportunities resulting from the project.
- To utilize national environmental and social institutions, systems, laws, regulations and procedures in the assessment, development and implementation of projects, whenever appropriate.
- To promote improved environmental and social performance, in ways which recognize and enhance LGED capacity.

ESS 1 Requirements

The LGED will:

(a) Conduct an environmental and social assessment of the proposed project, including stakeholder engagement;
(b) Undertake stakeholder engagement and disclose appropriate information in accordance with ESS10; (c) Develop an Environmental and Social Commitment Plan (ESCP), and implement all measures and actions set out in the legal agreement including the ESCP; and
(c) Conduct monitoring and reporting on the environmental and social performance of the project against the ESSs .

ESS 2: Labor and working Conditions

ESS2 recognizes the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth. LGED can promote sound worker-management relationships

and enhance the development benefits of a project by treating workers in the project fairly and providing safe and healthy working conditions.

ESS2 Objectives

- To promote safety and health at work.
- To promote the fair treatment, nondiscrimination and equal opportunity of project workers.
- To protect project workers, including vulnerable workers such as women, persons with disabilities, children (of working age, in accordance with this ESS) and migrant workers, contracted workers, community workers and primary supply workers, as appropriate.
- To prevent the use of all forms of forced labor and child labor.
- To support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law.
- To provide project workers with accessible means to raise workplace concerns.

Requirements

- Working conditions and management of worker relationships,
    - Terms and conditions of employment
    - Worker's organizations
    - Nondiscrimination and equal opportunity
- Protecting the work force
    - Child labor and minimum age
    - Forced labor
- Grievance mechanism
- Occupational Health and Safety (OHS)
- Contracted workers
- Community workers
- Primary supply workers

ESS 3: Resource efficiency and pollution prevention and management

ESS3 recognizes that economic activity and urbanization often generate pollution to air, water, and land, and consume finite resources that may threaten people, ecosystem services and the environment at the local, regional, and global levels. The current and projected atmospheric concentration of greenhouse gases (GHG) threatens the welfare of current and future generations. At the same time, more efficient and effective resource use, pollution prevention and GHG emission avoidance, and mitigation technologies and practices have become more accessible and achievable.

This ESS sets out the requirements to address resource efficiency and pollution prevention and management throughout the project life cycle consistent with GIIP.

Objectives

- To promote the sustainable use of resources, including energy, water and raw materials.
- To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities.
- To avoid or minimize project-related emissions of short and long-lived climate pollutants.

- To avoid or minimize generation of hazardous and non-hazardous waste.
- To minimize and manage the risks and impacts associated with pesticide use.

Requirements

The LGED will consider ambient conditions and apply technically and financially feasible resource efficiency and pollution prevention measures in accordance with the mitigation hierarchy. The measures will be proportionate to the risks and impacts associated with the project and consistent with GIIP, in the first instance the EHSGs.

- Resource efficiency
    - Energy use
    - Water use
    - Raw material use
- Pollution prevention and management
    - Management of air pollution
    - Management of hazardous and nonhazardous wastes
    - Management of chemicals and hazardous materials
    - Management of pesticides

ESS 4: Community health and safety

ESS4 recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impacts. In addition, communities that are already subjected to impacts from climate change may also experience an acceleration or intensification of impacts due to project activities.

ESS4 addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of LGED to avoid or minimize such risks and impacts, with particular attention to people who, because of their particular circumstances, may be vulnerable.

Objectives

- To anticipate and avoid adverse impacts on the health and safety of project-affected communities during the project life cycle from both routine and non-routine circumstances.
- To promote quality and safety, and considerations relating to climate change, in the design and construction of infrastructure, including dams.
- To avoid or minimize community exposure to project-related traffic and road safety risks, diseases and hazardous materials.
- To have in place effective measures to address emergency events.
- To ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities.

Requirements

- Community health and safety
    - Infrastructure and equipment design and safety
    - Safety of services
    - Traffic and road safety

  - Ecosystem services
  - Community exposure to health issues
  - Management and safety of hazardous materials
  - Emergency preparedness and response
- Security personnel
- Annex 1. Safety of dams
  - New dams
  - Existing dams and dams under construction (DUC)
  - Dam safety reports

ESS 5: Land Acquisition, restrictions on land Use and involuntary resettlement

ESS5 recognizes that project-related land acquisition and restrictions on land use can have adverse impacts on communities and persons. Project-related land acquisition or restrictions on land use may cause physical displacement (relocation, loss of residential land or loss of shelter), economic displacement (loss of land, assets or access to assets, leading to loss of income sources or other means of livelihood), or both. The term "involuntary resettlement" refers to these impacts. Resettlement is considered involuntary when affected persons or communities do not have the right to refuse land acquisition or restrictions on land use that result in displacement.

Objectives

- To avoid involuntary resettlement or, when unavoidable, minimize involuntary resettlement by exploring project design alternatives.
- To avoid forced eviction.
- To mitigate unavoidable adverse social and economic impacts from land acquisition or restrictions on land use by: (a) providing timely compensation for loss of assets at replacement cost and (b) assisting displaced persons in their efforts to improve, or at least restore, their livelihoods and living standards, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.
- To improve living conditions of poor or vulnerable persons who are physically displaced, through provision of adequate housing, access to services and facilities, and security of tenure.
- To conceive and execute resettlement activities as sustainable development programs, providing sufficient investment resources to enable displaced persons to benefit directly from the project, as the nature of the project may warrant.
- To ensure that resettlement activities are planned and implemented with appropriate disclosure of information, meaningful consultation, and the informed participation of those affected.

Requirements

- General
  - Eligibility classification
  - Project design
  - Compensation and benefits for affected persons
  - Community engagement
  - Grievance mechanism
  - Planning and implementation

- Displacement
    - Physical displacement
    - Economic displacement
- Collaboration with other responsible agencies or subnational jurisdictions
- Technical and financial assistance
- Annex1: Resettlement Plan

ESS 6: Biodiversity Conservation and sustainable management of living natural resources

ESS6 recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development.

Objectives

- To protect and conserve biodiversity and habitats.
- To apply the mitigation hierarchy4 and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity.
- To promote the sustainable management of living natural resources.
- To support livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of practices that integrate conservation needs and development priorities.

Requirements

- General
    - Assessment of risks and impacts
    - Conservation of biodiversity and habitats
    - Modified habitat
    - Natural habitat
    - Critical Habitat
    - Legally protected and internationally recognized areas of high biodiversity value
    - Invasive alien species
    - Sustainable management of living natural resources
- Primary suppliers

ESS 7: Indigenous peoples/sub-saharan African historically Underserved traditional local Communities

This ESS7 applies to a distinct social and cultural group identified in accordance with paragraphs 8 and 9 of this ESS. The terminology used for such groups varies from country to country, and often reflects national considerations. ESS7 uses the term “Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities,”1 recognizing that groups identified under paragraphs 8 and 9 may be referred to in different countries by different terms. Such terms include “Sub-Saharan African historically underserved traditional local communities,” “indigenous ethnic minorities,” “aboriginals,” “hill tribes,” “vulnerable and marginalized groups,” “minority nationalities,” “scheduled tribes,” “first nations” or “tribal groups .” For the purposes of this ESS, the term “Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities” includes all such alternative terminology.

Objectives

- To ensure that the development process fosters full respect for the human rights, dignity, aspirations, identity, culture, and natural resource based livelihoods of Indigenous Peoples/ Sub-Saharan African Historically Underserved Traditional Local Communities.
- To avoid adverse impacts of projects on Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities, or when avoidance is not possible, to minimize, mitigate and/or compensate for such impacts.
- To promote sustainable development benefits and opportunities for Indigenous Peoples/SubSaharan African Historically Underserved Traditional Local Communities in a manner that is accessible, culturally appropriate and inclusive.
- To improve project design and promote local support by establishing and maintaining an ongoing relationship based on meaningful consultation with the Indigenous Peoples/SubSaharan African Historically Underserved Traditional Local Communities affected by a project throughout the project's life cycle.
- To obtain the Free, Prior, and Informed Consent (FPIC) of affected Indigenous Peoples/ Sub-Saharan African Historically Underserved Traditional Local Communities in the three circumstances described in this ESS.
- To recognize, respect and preserve the culture, knowledge, and practices of Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities, and to provide them with an opportunity to adapt to changing conditions in a manner and in a timeframe acceptable to them.

Requirements

- General
    - Projects designed solely to benefit indigenous peoples/Sub-Saharan African historically underserved traditional local communities
    - Projects where indigenous peoples/Sub-Saharan African historically underserved traditional local communities are not the sole beneficiaries
    - Avoidance of adverse impacts
    - Mitigation and development benefits
    - Meaningful consultation tailored to indigenous peoples/Sub-Saharan African historically underserved traditional local communities
- Circumstances requiring free, prior and informed consent (FPIC)
    - Impacts on lands and natural resources subject to traditional ownership or under customary use or occupation
    - Relocation of indigenous peoples/ Sub-Saharan African historically underserved traditional local communities from lands and natural resources subject to traditional ownership or under customary use or occupation
    - Cultural heritage
- Grievance mechanism
- Indigenous peoples/Sub-Saharan african historically underserved traditional local communities and broader development planning

ESS 8: Cultural heritage

ESS8 recognizes that cultural heritage provides continuity in tangible and intangible forms between the past, present and future. This ESS sets out general provisions on risks and impacts to cultural heritage from project activities. ESS7 sets out additional requirements for cultural heritage in the context of Indigenous Peoples. ESS6 recognizes the social and cultural values of biodiversity. Provisions on Stakeholder Engagement and Information Disclosure are set out in ESS10.

Objectives

- To protect cultural heritage from the adverse impacts of project activities and support its preservation.
- To address cultural heritage as an integral aspect of sustainable development.
- To promote meaningful consultation with stakeholders regarding cultural heritage.
- To promote the equitable sharing of benefits from the use of cultural heritage.

Requirements

- General
- Stakeholder consultation and identification of cultural heritage
    - Confidentiality
    - Stakeholders' access
- Legally protected cultural heritage areas
- Provisions for specific types of cultural heritage
    - Archaeological sites and material
    - Built heritage
    - Natural features with cultural significance
    - Movable cultural heritage
- Commercial use of cultural heritage

ESS 9: Financial Intermediaries –

ESS9-FI doesn't required and applicable to the WeCARE project.

ESS 10: Stakeholder engagement and Information Disclosure

This ESS recognizes the importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation.

Stakeholder engagement is an inclusive process conducted throughout the project life cycle. Where properly designed and implemented, it supports the development of strong, constructive and responsive relationships that are important for successful management of a project's environmental and social risks. Stakeholder engagement is most effective when initiated at an early stage of the project development process, and is an integral part of early project decisions and the assessment, management and monitoring of the project's environmental and social risks and impacts. This ESS must be read in conjunction with ESS1. Requirements regarding engagement with workers are found in ESS2. Special provisions on emergency preparedness and response are covered in ESS2 and ESS4. In the case of projects

involving involuntary resettlement, Indigenous Peoples or cultural heritage, the Borrower will also apply the special disclosure and consultation requirements set out in ESS5, ESS7 and ESS8.

Objectives

- To establish a systematic approach to stakeholder engagement that will help Borrowers identify stakeholders and build and maintain a constructive relationship with them, in particular project-affected parties.
- To assess the level of stakeholder interest and support for the project and to enable stakeholders' views to be taken into account in project design and environmental and social performance.
- To promote and provide means for effective and inclusive engagement with project-affected parties throughout the project life cycle on issues that could potentially affect them.
- To ensure that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format.
- To provide project-affected parties with accessible and inclusive means to raise issues and grievances, and allow Borrowers to respond to and manage such grievances.

Requirements

- Engagement during project preparation
    - Stakeholder identification and analysis
    - Stakeholder Engagement Plan
    - Information disclosure
    - Meaningful consultation
- Engagement during project implementation and external reporting
- Grievance mechanism
- Organizational capacity and commitment
- Annex 1. Grievance mechanism

Projects on International Waterways (OP 7.50)

This Policy is not triggered since the program will not cover geographical regions where trans-boundary waterways/rivers are exist.

Project Disputed Areas (OP 7.60)

This OP is not triggered since no part of the program area is located in any disputed territory.

Annex C: Checklist of Environmental Parameters for LGED Sub-projects

Table A: Checklist of Environmental Parameters of Road Projects

Name of the Project_____

ENVIRONMENTAL PARAMETERS	TIAL ENVIRONMENTAL EXAMINATION				
	Positive Impact	No mpact	Adverse Impact		
			Low	Moderate	Severe
1. PHYSICAL IMPACT					
Regional Hydrology and Flooding					
Erosion and Siltation					
Drainage Congestion/ Water Logging					
Wastewater flow					
Dust/ Noise pollution					
Topography/ Land Use					
2. ECOLOGICAL IMPACT					
Wetland and Aquatic Habitat					
Fisheries					
Trees and Vegetation					
Forest and Plantation					
Nuisance Plant					
Wildlife and Biodiversity					
3. IMPACT ON HUMAN INTEREST					
Loss of Agricultural Lands					
Loss of Top Soil of Agricultural Land					
Employment Opportunities					
Industrial Activities					
Irrigation Facilities					
Navigation and Boat Communication					

ENVIRONMENTAL PARAMETERS	TIAL ENVIRONMENTAL EXAMINATION				
	Positive Impact	No mpact	Adverse Impact		
			Low	Moderate	Severe
Transportation and Road Communication					
Tourism					
Markets and Bazaars					
4. QUALITY OF LIFE VALUES					
Road Safety					
Health and Nutrition					
Cultural and Heritage Values/ Landscape					
Education/ Literacy					

Table B: Checklist of Environmental Parameters of Growth Center and Boat Landing Station (Ghat) Projects

Name of the Project_____

ENVIRONMENTAL PARAMETERS	INITIAL ENVIRONMENTAL EXAMINATION				
	Positive Impact	No Impact	Adverse Impact		
			Low	Moderate	Severe
1. PHYSICAL IMPACT					
Surface Water Pollution					
Ground Water Pollution					
Drainage Congestion/ Water Logging					
Erosion and Siltation					
Flooding					
2. ECOLOGICAL IMPACT					
Fisheries					
Trees					
Forest					
Solid Waste					

ENVIRONMENTAL PARAMETERS	INITIAL ENVIRONMENTAL EXAMINATION				
	Positive Impact	No Impact	Adverse Impact		
			Low	Moderate	Severe
Slaughtering Waste Nuisance Plant 3. IMPACT ON HUMAN INTEREST Loss of Agricultural Lands Employment Opportunity Navigation and Boat Communication 4. QUALITY OF LIFE VALUES Sanitation Water Supply Cultural & Heritage Values					

Table C: Checklist of Environmental Parameters of Small Scale Water Resources Sector Projects

Name of the Project_____

ENVIRONMENTAL PARAMETERS	INITIAL ENVIRONMENTAL EXAMINATION				
	Positive Impact	No Impact	Adverse Impact		
			Low	Moderate	Severe
1. PHYSICAL IMPACT Regional Hydrology/ Flooding Drainage Congestion/ Water logging Erosion and Siltation Annual Natural Flushing Soil Characteristics and Fertility 2. ECOLOGICAL IMPACT Wildlife and Biodiversity Open Water and Culture Fisheries Wetland and Aquatic Habitat					

ENVIRONMENTAL PARAMETERS	INITIAL ENVIRONMENTAL EXAMINATION				
	Positive Impact	No Impact	Adverse Impact		
			Low	Moderate	Severe
Terrestrial Habitat 3. IMPACT ON HUMAN INTEREST Land Acquisition and Loss of Land Agricultural Development Navigation and Boat Communication Road Communication Irrigation Facilities 4. QUALITY OF LIFE VALUES Employment Opportunities Health and Nutrition Education/ Literacy Landscape					

Table D: Checklist of Environmental Parameters of Urban Development Sector Projects

Name of the Project_____

ENVIRONMENTAL PARAMETERS	INITIAL ENVIRONMENTAL EXAMINATION				
	Positive Impact	No Impact	Adverse Impact		
			Low	Moderate	Severe
1. PHYSICAL IMPACT Regional Hydrology/ Flooding Drainage Congestion/ Water Logging Erosion and Siltation Water Pollution Ground Water Air Pollution Noise Pollution					

ENVIRONMENTAL PARAMETERS	INITIAL ENVIRONMENTAL EXAMINATION				
	Positive Impact	No Impact	Adverse Impact		
			Low	Moderate	Severe
Topography and Land Use					
2. ECOLOGICAL IMPACT					
Vegetation					
Solid Wastes					
Wastewater					
Fisheries					
Agriculture					
3. HUMAN INTEREST					
Land Loss					
Transportation					
Employment Opportunity					
Traffic Congestion					
Markets and Bazaars					
4. QUALITY OF LIFE VALUES					
Sanitation					
Water Supply					
Literacy					
Electricity Facility					
Road Safety					
Health Services					
Slum Improvement					

Annex D: Terms of Reference (ToR) of the ESIA Study

Introduction: The Government of Bangladesh (GoB) through the Ministry of Finance (MoF) has formally requested the World Bank (WB) to support the preparation and implementation of the Western Economic Corridor and Regional Enhancement Program (WECARE Program) with the Roads and Highways Department (RHD) and the Local Government Engineering Department (LGED) as the main implementing agencies. RHD will implement the widening and traffic safety improvements of the western corridor from Jashore – Jhenaidah – Bonpara – Hatikumrul corridor and Bhomra – Satkhira – Navaron corridor totaling to about 260 km of regional roads. LGED will implement construction, rehabilitation and improvements of priority rural roads and market infrastructures in 10 districts in the Western Region. The exact locations of these roads and market infrastructures are not known at this point. The program is envisaged to be implemented in phases and could run from 10-12 years of implementation. The Program would be implemented in three phases. The first phase of this project will follow the same component structure as the overall program and will finance the upgrading of national highways from Jashore to Jhenaidah (48 km) and associated feeder roads and rural market infrastructure along this part of the corridor, and road transport sector modernization interventions. In parallel with phase 1, AIIB would finance the upgrading of national highways from Bonpara to Hatikumrul (52km).

Given the length of the corridor to be widened and improved (260km) notwithstanding project support to priority feeder roads and complementary socio-economic infrastructure, the potential environmental and social risks and impacts of the program could be adverse and significant, covering a larger area of influence. Land acquisition and involuntary resettlement will be significant and considerable number of mature trees will be felled down along the expanded Right of Way (RoW). Environment, occupational and community health and safety issues, and labour issues, will also be significant particularly along the corridor and transport and access routes during construction. This Environmental and Social Management Framework (ESMF) is required to draft for the WeCARE to identify the required environmental and social management measures that need to be taken by the project authorities in LGED during the planning, design, construction and operations of the rural road improvements, rural road maintenance, growth center markets, in order to ensure compliance with the Government of Bangladesh own requirements and those of the World Bank.

A ESMF was prepared for WeCARE during appraisal mainly to address the potential environmental and social, labour, Environment, Health and Safety (EHS) and stakeholder's engagement issues related to LGED's sub-projects to be implemented under the WeCARE program mainly roads and growth centers' infrastructural improvement/ rehabilitation. All the potential major environmental and social impacts along with mitigation and management measures have been compiled in the form of ESMF. More particularly, this ESMF highlights the requirements related to the 10 Environment and Social Standards (ESSs) of the World Bank Environmental and Social Framework (ESF).

Objectives of the ESIA: The objective of the assignment is to carry out the tasks related to environmental aspects in light of the ToR. These include preparation of the Environmental Impact Assessment (including ESMP) of the WeCARE, Phase I.

Scope of Services: Carry out an overall Environmental and Social Impact Assessment (ESIA) and prepare Environmental and Social Management Plan (ESMP) for the project area covered under the WeCARE. ESIA and ESMP would be prepared according to the World Bank Guidelines and Operational Policies and the GoB procedures. The Consultant shall familiarize themselves with the project details and components. The Consultant should interact with other preparation consultants of PIU to determine best way of conducting environment activities. Consultant shall appropriately plan the timing of the deliverables.

The major activities to be carried out will include, but not limited to the following:

A. Review the ESMF Report

a. Review the existing ESMF report prepared for the WeCARE;
b. Review the preliminary Baseline report prepared on the basis of reconnaissance field investigations carried out by LGED;
c. Determine any gaps particularly in the ESMF;

B. Review the Project details

a. Obtain from the LGED and PIU consultants all the details about the project;
b. Hold meetings with the PIU team to understand the scope and nature of work;

C. Scoping

a. Carry out reconnaissance field visit. On the basis of this field visit and review of the project details, carry out scoping for the ESIA study. Screen out the impacts that are not likely to take place and prepare a list of potential impacts that are likely to take place.
b. Prepare criteria to be used to determine the program influence area for conducting ESIA;
c. Specify the boundaries of the study area for the assessment (project influence area): canal area, river basin/catchments, land use, the drainage area and patterns, aquaculture and other development interventions – current and proposed, watersheds, access to sensitive/remote areas such as parks/ reserves/forests/agriculture land, elements of transport development program in the area.

D. Describe the Proposed Project

a. Provide information on the following: location of all project-related development sites and general layout and extent of facilities at project-related development sites; diagrams/drawings of proposed structures; design basis, size, capacity; preconstruction activities; construction activities (land clearing, land grading, worker camps, if any), schedule, staffing and support, facilities and services; operation and maintenance activities, staffing and support, facilities and services; management of risks, including health and safety; life expectancy for major components. Components may include any or all of the following: structural measures; dikes and levees; drainage, and nonstructural measures, service road and route(s), adjustments to alignments of canals, including earthworks; fish passes and regulator, repair/replacement of infrastructures; and resettlement sites. Also describe sources of materials used during proposed works; generation of wastes and their disposal, expected volume of use, construction-related vehicular traffic; resettlement, land acquisition, safety features; staffing and accommodation of employees, including site clearance, scheduling of project activities, approximate quantity and likely source of construction materials.
b. Provide maps and diagrams with appropriate scales to illustrate the general setting of project-related development sites and key project components. These maps and diagrams shall include overall project layout, details of individual components, project time schedule, and any related aspects.

E. Description of the Environment

a. Review the Baseline report prepared as part of the ESMF of the WeCARE and identify gaps if any. Obtain additional data as needed.
b. Assemble and evaluate and baseline data on the environmental characteristics of the study area, including river basin/watershed, construction, resettlement sites, inundation, floodplain, and biological features (habitats and rare species, vegetation, fisheries, birds, terrestrial fauna), and floodplain (recession) agriculture. Include information on any changes anticipated before the project commences.

c. Physical environment: geology, topography, soils, climate, surface and ground water hydrology, annual peak discharge, ambient air quality; noise; vehicular traffic; recurrence intervals of various peak discharges and peak stages of various discharges, erosion and sediment loading, existing/projected pollution discharges and receiving water quality; instances of flooding, siltation/erosion, depth, bottom topography of the rivers;
d. Biological environment: ecology: flora and fauna, including rare or endangered species; sensitive natural habitats, including sanctuaries and reserves; biological connectivity; potential vectors for disease; exotics and aquatic weeds; application of pesticides and fertilizers (current and projected as agriculture production is expected to be increased);
e. Socio-cultural environment: land use (including current crops and cropping patterns; fisheries and farm outputs and inputs; transportation; land tenure and land titling; present water supply and water uses (including current distribution of water resources); control over allocation of resource use rights; water and fisheries related human health problems; cultural sites, present and projected population; present land use/ownership; planned development activities; community structure; present and projected employment by industrial category; distribution of income, goods and services; recreation; public health; cultural properties; indigenous peoples, customs and aspirations; significant natural, cultural or historic sites, etc. Presence of HIV/AIDS and other sexually transmitted diseases;
f. Provide location wise and union/upazila wise information of the project intervention and identify any critical aspects that need special consideration during design, construction and operation.

F. **Stakeholder consultations**

a. Consultations need to be carried out at least twice, in accordance with the WB requirements: (a) shortly after environmental screening and before the terms of reference for the ESIA is finalized; and (b) once a draft ESIA report is prepared.
b. Review the consultations carried out during the ESMF.
c. Carry out consultations with institutional stakeholders including but not limited to officials from DoE, LGED, Local Government, BWDB, LGED, and also with local, national, and international NGOs, and other organization as appropriate and relevant.
d. Carry out comprehensive consultations with primary stakeholders particularly with the communities to be positively and negatively affected by the project.
e. Relevant materials will be provided to affected groups in a timely manner prior to consultations and in a form and language that is understandable and accessible to the groups being consulted. The Consultant should maintain a record of the public consultation (written and video and pictorial proof) and the records should indicate: means other than consultations (eg, surveys) used to seek the views of affected stakeholders; the date and location of the consultation meetings, a list of the attendees and their affiliation and contact address; and, summary minutes.

G. Determination of the Potential Impacts of and Impacts on the Proposed Project

a. Review the impact assessment carried out during the ESMP and identify gaps if any.
b. Review the ESMP compliance for the ESMF, particularly review the institutional setup, implementation of mitigation measures, environmental monitoring and documentation, environmental monitoring reports, environmental quarterly progress reports, and other reports. Determine gaps if any; also determine impracticality and or inappropriateness of any ESMP aspect such as institutional set up, mitigation measures, monitoring measures, and others.

c. This analysis will require in depth interpretation. In this analysis, distinguish between significant positive and negative impacts, direct and indirect impacts, and immediate and long-term impacts. Identify impacts that are unavoidable or irreversible. Wherever possible, describe impacts quantitatively, in terms of environmental costs and benefits. Assign economic values when feasible. Characterize the extent and quality of available data, explaining significant information deficiencies and any uncertainties associated with predictions of impact. Compare the impact with the baseline. Provide ToRs for studies to obtain the missing information. Special attention should be given to the environmental impact those identified during the screening process of ESMF.

H. Development of an Environmental and Social Management Plan (ESMP)

a. Review the ESMP included guideline in the ESMF.
b. Identify key mitigation and enhancement approaches and prepare the impact specific mitigation measures. Estimate the impacts and costs of the mitigation measures and of the institutional and training requirements to implement them. If appropriate, assess compensation to affected parties for impacts that cannot be mitigated. Prepare an ESMP, including proposed work programs, budget estimates, schedules, staffing and training requirements, and other necessary support services to implement the mitigating measures, monitoring, etc. Include measures for emergency response to accidental events (e.g. entry of raw sewage or toxic wastes into rivers, streams).
c. Prepare a detailed plan to monitor the implementation of mitigating measures and the impacts of the project during rehabilitation and operation (e.g., emission and ambient levels of pollutants where these may be detrimental to human health, soil erosion, changes in the floodplain). Include in the plan an estimate of capital and operating costs and a description of other inputs (such as training and institutional strengthening) needed to implement the plan. Include a regular schedule of monitoring the quality of surface and ground waters to ensure that mitigation measures are effective. Provide guidance for reporting and enforcement and conducting environmental audits.
d. Estimate the costing of ESMP, environmental code of practices (ECoPs) and provide necessary clauses for incorporating in the bid document.
e. Review the responsibilities and capability of institutions at local, provincial/regional, and national levels and recommend steps to strengthen or expand them so that the ESMP may be effectively implemented. The recommendations may extend to new laws and regulations, new agencies or agency functions, inter-sectoral arrangements, management procedures and training, staffing, operation and maintenance training, budgeting and financial support.
f. An outline of the contents of the ESMP to be included in the project's Operational Manual should be provided along with environmental/social protection clauses for contracts and specifications.
g. Define the roles and responsibilities of officials, staff, consultants and contractors of LGED on environmental management.
h. Describe in details who will (a) implement the environmental mitigation activities (b) carrying out environmental monitoring; (c) supervise environmental mitigation and monitoring; (d) design, implement and apply the environmental management information system (EMIS); and (e) prepare quarterly progress report on environmental management;

ESIA Report Compilation:

a. Finalize the draft ESIA incorporating the comment from the consultation (see Annex B for the ESIA structure);
b. Translate and finalize the executive summary of ESIA in Bengali.

Team composition and qualifications:

The assignment requires interdisciplinary analysis with specialized sector knowledge (i.e., ecology, fisheries, marine sciences, water resource and hydrology). The general skills required of the Environmental Safeguard team are: environmental management planning, civil engineer(s), with particular experience in road projects, river/canal re-excavation, general construction, growth center establishment, wildlife and aquatic biologist depending upon the predicted impacts, land use planner, sociologist, archaeologist and communications / stakeholder engagement. The consulting team must be able to demonstrate appropriate skill mix and depth of experience to cover all areas of the proposed analysis, including incorporation of other specialized skill sets where required. The consulting team shall be led by a Team Leader with at least 10 years of experience leading ESIA studies, including prior international experience on similar types of LGED projects, and prior experience as either team leader or deputy team leader on at least one (1) previous major ESIA for World Bank funded projects.

Schedule/Duration of the study:

The study period shall be of 12 (twelve) months from the date of commencement of the study.

Reports:

After commencement of the study the submission of the reports shall be both in hard (3 copies) and soft copy as follows:

- Inception Report---submitted at the end of Ist month of signing the contract
- Draft Scoping Report ---submitted at the end of 3rd month of signing the contract
- Draft Baseline Report---submitted at the end of sixth month of signing the contract
- Draft Environmental and Social Impact Assessment with a standalone Executive Summary submitted at the end of 9th month of signing the contract
- Final Environmental and Social Impact Assessment with a standalone Executive Summary submitted at the end of 12th month of signing the contract
- Bengali Translation of the Executive Summary -- submitted at the end of 12th month of signing the contract.

Reporting:

The consultant will report to the Project Director, Western Economic Corridor and Regional Enhancement Program (WeCARE), LGED.

Annex E: Structure of the ESIA Report

The Consultant is required to prepare an ESIA report that is concise and limited to significant environmental issues. The main text should focus on findings, conclusions and recommended actions, supported by summaries of the data collected and citations for any references used in interpreting those data. Detailed or uninterrupted data are not appropriate in the main text and should be presented in appendices or a separate volume. Unpublished documents used in the assessment may not be readily available and should also be assembled in an annex. Organize the environmental assessment report according to the outline below.

The report should be prepared as per the following key contents:

1. Executive Summary (ES): The Executive Summary should mirror the report both in form and content and should be about 10 percent in length of the report. The significant findings and recommended actions should be clearly discussed in the ES.
2. Introduction: This section will include (i) purpose of the report and (ii) extent of the environmental study.
3. Policy, Legal and Administrative Framework: This section will describe relevant environmental policies, rules and administrative procedures that need to be followed for the proposed project. The relevant international environmental agreements to which Bangladesh is a party should also be discussed.
4. Project Planning of Components and Description: This section will provide a brief but clear picture about (i) type of project; (ii) category of project; (iii) need for project; (iv) location (use maps showing general location, specific location, and project site); (v) size or magnitude of operation; (vi) Project influence area (vii) proposed schedule for implementation. The proposed project should be described with reasonable details so that the ESIA report can be read as a standalone document without reference to other project documents. This section should present the parameters which should be considered in the design for minimizing the environmental impact.
5. Environmental and Social Baseline: This section will provide sufficient information on the existing environmental and Social baseline resources in the area affected by the project, including the following:
    a. Physical Resources: (e.g. atmosphere (e.g. air quality and climate), topography and soils, surface water & groundwater, geology/seismology)
    b. Water Resources: (e.g. hydrology, surface water and groundwater system, sedimentation, tidal influence, etc.)
    c. Land and Agriculture resources: (e.g. land type, land use, cropping pattern, crop production, etc.)
    d. Fisheries resources: (e.g. fisheries diversity, fish production, aquaculture, etc.)
    e. Ecology: (e.g. ecosystems, wildlife, forests, rare or endangered species, protected areas)
    f. Socio-economic condition:(e.g. population and communities (e.g. numbers, locations, composition, employment), health facilities, education facilities, socio-economic conditions (e.g. community structure, family structure, social wellbeing), physical or cultural heritage, current use of lands and resources for traditional purposes by indigenous peoples, structures or sites that are of historical, archaeological, paleontological, or architectural significance, economic development (e.g. industries, infrastructure facilities, transportation, power sources and transmission, mineral development, and tourism facilities, etc.).

To assess the dimensions of the study area, the relevant physical, biological, and socioeconomic conditions before the project commencement should be discussed. The relevant data related to the issues have to be collected and reported.

6. Climate Change issues: Climate change aspects in global, regional and local perspectives and the likely impacts on the Project area and its surroundings should be briefly discussed in this section.
7. Significant Environmental Impacts: This chapter will need careful interpretation. Significant environmental and social impacts due to project location, and related to project design, construction, and operations phase should be discussed in detail in this section. The prediction and assessment of the project's likely positive and negative impacts, in quantitative terms to the extent possible should be made. The mitigation measures and any residual negative impacts that cannot be mitigated should be identified. The opportunities for environmental enhancement should also be explored. Estimates should be done on the extent and quality of available data, key data gaps, and uncertainties associated with predictions; and the topics that do not require further attention should be specified. Considering the impact the LGED sub-projects has to be classified into Categories of 'Substantial to Moderate Risk' as per ESS1.
8. Cumulative and Induced Impacts: Cumulative impacts of the proposed Project and other projects as well as induced impacts should be provided in this section.
9. Environmental and Social Management Plan: The environmental and social management plan (ESMP) will include mitigation and enhancement plan, compensation and contingency plan as well as monitoring plan including institutional arrangement for implementation of the ESMP. The ESMP should also include tentative cost of implementation of the plan. Guideline for preparation of ESMP is included in Annex C.

   The ESMP should include a grievance redress mechanism (GRM). The mechanism should be outlined to ensure that the project sponsor maintains appropriate external channels for communicating with and receiving feedback, questions, and complaints from local stakeholders, as well as internal procedures for following up and resolving any complaints or grievances in a timely manner. The mechanism should include more than one channel for receiving communications and grievances (for example, a hotline, a public information office, boxes to receive written complaints or queries, etc. – depending on local preferences, literacy levels, etc.), as well as indicating requirements, responsibilities and budget for documenting, processing, and resolving issues that arise, including providing feedback to complainant(s) regarding the resolution. The existence of the grievance mechanism must be fully and proactively disclosed to the public.

10. Stakeholder Consultation and Disclosure: The proceeding of the consultations done as per OP4.01 has to be included in this section of the ESIA report. It is to be noted that during the ESIA process for all WB Category Substantial to Moderate Risk projects, the proponents have to consults project-affected groups and local nongovernmental organizations (NGOs) about the project's environmental aspects and take their views into account. The proponents' initiates such consultations as early as possible. For Category Substantial Risk projects, the proponents consult these groups at least twice: (a) shortly after environmental screening and before the terms of reference for the SIA is finalized; and (b) once a draft ESIA report is prepared. In addition, the proponent must consult with such groups throughout project implementation as necessary to address ESIA-related issues that affect them.

Disclosure: For meaningful consultations between the borrower and project-affected groups and local NGOs on all Category Substantial and Moderate projects proposed for WB financing, the proponents must provide relevant material in a timely manner prior to consultation and in a form and language (i.e. Bangla) that are understandable and accessible to the groups being consulted. The disclosure details done as per ESS10 should be provided in this section.

11. References: References should be provided to written materials both published and unpublished, used in study preparation.

Annexes:

- List of Environmental Assessment Preparers
- Record of interagency and consultation meetings, including consultations for obtaining the informed views of the affected people and local nongovernmental organizations (NGOs). The record specifies any means other than consultations (e.g., surveys) that were used to obtain the views of affected groups and local NGOs
- Data and Unpublished Reference Documents.

Annex F: Guideline for Preparing Environment and Social Management Plan (ESMP)

The Consultant is required to develop an Environmental and Social Management Plan (ESMP) consisting of a set of feasible and cost-effective mitigation measures and monitoring and institutional plan to prevent or reduce significant negative impacts to acceptable levels. This will include measures for emergency response to accidental events (e.g., fires, explosions), as appropriate. The Consultant will provide an estimation of the impacts and costs of the mitigation measures, and of the institutional and training requirements to implement them. In particular, this would include:

- **Environmental and Social Mitigation & Enhancement Measures:** Recommend feasible and cost effective measures to prevent or reduce significant negative impacts to acceptable levels. Apart from mitigation of the potential adverse impacts on the environmental components, the ESMP shall identify opportunities that exist for the enhancement of the environmental quality along the surrounding area. Residual impacts from the environmental measures shall also be clearly identified. The ESMP shall include detailed specification, bill of quantities, execution drawings and contracting procedures for execution of the environmental mitigation and enhancement measures suggested, separate for pre-construction, construction and operation periods. In addition, the ESMP shall include good practice guides related to construction and upkeep of plant and machinery. Responsibilities for execution and supervision of each of the mitigation and enhancement measures shall be specified in the ESMP. A plan for continued consultation to be conducted during implementation stage of the project shall also be appended.
- **Institutional Arrangements, Capacity Building and Trainings:** The ESMPs shall describe the implementation arrangement needed for the project, implementation of ESMP, especially the capacity building proposals including the staffing of the environment unit (as and when recommended) adequate to implement the environmental mitigation and enhancement measures. For each staff position recommended to be created, detailed job responsibilities shall be defined. Equipment and resources required for the environment unit shall be specified, and bill of quantities prepared. A training plan and schedule shall be prepared specifying the target groups for individual training programs, the content and mode of training. Training plans shall normally be made for the client agency (including the environmental unit), the supervision consultants and the contractors.
- **Supervision and Monitoring:** Environmental monitoring plan will be an integral part of the ESMP, which outlines the specific information to be collected for ensuring the environmental quality at different stages of project implementation. The parameters and their frequency of monitoring should be provided along with cost of the monitoring plan and institutional arrangements for conducting monitoring. Reporting formats should be provided along with a clear arrangement for reporting and talk corrective action. The ESMP shall list all mandatory government clearance conditions, and the status of procuring clearances.
- **Reporting:** The ESMP will specify the documentation and reporting requirements, specifically, complete record will be maintained for compliance monitoring, effects monitoring, trainings, grievances, accidents, incidents, resource usage, and waste disposal quantities.
- **Grievance Redress Mechanism:** The ESMP will describe the grievance redress mechanism (GRM) to address the project-related grievances and complaints particularly from the local communities.
- **ESMP implementation cost:** The ESMP will also include the cost of its implementation including personnel costs, costs on trainings, effects monitoring, additional studies, and others.

Annex G: Sample Screening Form for WeCARE sub-projects and Associated Facilities

A. ENVIRONMENTAL SCREENING FORM (Sample)

1. Name of Sub project or Associated Facility:
2. Location (Village, Ward, District, Union): ……..
3. Type of sub project: ……..
4. Size of the subproject……..
5. Number of people benefiting the sub project: ……
6. Contact person……
7. Telephone……
8. General Description of the sub project:-

i. Sub project objectives: ……..
……
……
……

ii. Sub project components: ……..
……
……
……
……

iii. Subproject activities
……
……
……
……
……

9. Baseline Description of affected Environment

i. Description of physical chemical environment (soil, air, water, etc.)
……
……
……
……

ii. Description of Biological Environment (habitats and Communities, Flora etc):
……
……
……
……
……

iii. Description of Socio-economic Environment e.g. historical sites, aesthetic aspects, public health, infrastructure
……
……
……
……__

10. Identification of Negative Environmental Impacts

Aspects	Yes	No	Scale of Impact			Remarks[2]
			High	Medium	Low	
• loss of top soil?	☐	☐	☐	☐	☐	
• negative effects on species of flora or fauna or their habitat?	☐	☐	☐	☐	☐	
• negative effects on designated wetlands?	☐	☐	☐	☐	☐	
• negative effects on vegetation?	☐	☐	☐	☐	☐	
• destruction of trees and vegetation?	☐	☐	☐	☐	☐	
• impact on fish migration and navigation?	☐	☐	☐	☐	☐	
• drainage congestion in the project area?	☐	☐	☐	☐	☐	
• water logging in the project areas?	☐	☐	☐	☐	☐	
• negative effects on surface water quality, quantities or flow?	☐	☐	☐	☐	☐	
• negative impact on soil stability and compactness?	☐	☐	☐	☐	☐	
• negative impacts on irrigation and canals	☐	☐	☐	☐	☐	
• increased noise due to day-to-day construction activities?	☐	☐	☐	☐	☐	
• increased wind-blown dust from material (e.g. fine aggregate) storage areas?	☐	☐	☐	☐	☐	
• degradation or disturbance of historical or culturally important sites (mosque, graveyards, monuments etc.)?	☐	☐	☐	☐	☐	

11. Possible environmental impacts of the subproject

Environmental impacts	Mitigation measures (Identify the relevant **ECoP)**

12. The Environment and Social Management Plan (ESMP) to be taken during implementation of the subproject. (If
impacts beyond the **ECoP)**

4. Recommendations:

SIGNATURE OF UNION COMMITTEE MEMBERS INVOLVED:			
Chairperson Union Committee	Name:	Signature:	Date:
Field Supervisor / PIO	Name:	Signature:	Date:
Community members (add columns if required)	Name:	Signature:	Date:
Indigenous Community/ Groups (If required)	Name:	Signature:	Date:

B. SOCIAL SCREENING FORM (Sample)

A. General Information

Title of the Subproject: …… ……..

Village/Mouza…….. Upazila: ……..

District: ……

Screening Date: ……

B. Project Related Information

B1 Activities of Subproject includes: New construction/ Improvements/ Repair /Renovation **(described in brief regarding subproject activities)**

……
……
……

B2. Describe existing land use/occupancy of site and surroundings in brief and accordingly draw a free-hand map **(Please use separate sheet)**

……

……

C. Socio-economic Information

C1 What are the asset(s) that would be affected due to Subproject Interventions? **Yes or No**

☐ Land ……
☐ Physical Structure (dwelling or commercial)……..
☐ Trees/crops…….
☐ Natural Resources (Water bodies/ Forest/ Public Pond)….
☐ Community Resource Property…..
☐ Others (please specify)….

C2 Land

C.2.1 Ownership of Land: Public/Private……..

C.2.2 Type of Land: Agricultural/ Homestead/ Low Land /Fallow/ Pond

Please specify…….

□ Does the subproject require additional land permanently or on a temporary basis?

□ Sometimes as part of road/canal/community resource property upgrading interventions, subprojects may require small parcels of land permanently to meet engineering design requirements. In such case what would be the land procurement policy?
Direct Purchase…Yes/no……; voluntary donation……yes/no…; acquisition …….. Yes/no……?

□ To except voluntarily donated land what would be the legal procedure?

……
……
……

□ In case of land acquisition, will there be physical and/or economic displacement of people?

C2.3 Is there any **squatter/ encroacher/ leaseholder** residing on public lands? Yes/ No and specify type ……
If yes.
□ What would be the total numbers of Affected Families?

……
□ Is there any possibility of physical displacement?
……
□ How will their livelihoods be affected? (example: due to loss of shelter and housing structure, loss of income source, loss of grazing field/ social network/ family bondage etc)
……
……
……..
□ Do the affected families have school going children? Yes/no
If yes,……..how many such children are there?

□ Among the affected household, is there any person holding long term lease? Yes/no…… if yes, Land uses for what purpose?....., Till how many years remains out of total leasing period?.....

C3 Structure (Housing/Commercial)

C 3.1 Type and total number of Housing structure that would be affected: (Type : Kachcha-temporary structure made by tin/bamboo/ straw etc, semi-pucca- brick made structure with tin at roof and pucca-permanent brick made structure)
……
……

C 3.2 Is there any commercial/ business structure that would be affected?
……..
……

C 3.3 Ownership types of the affected structures: Private/ Leaseholder/squatter/encroacher
Please specify……..

C 3.4 Is there any tenant identified using the affected structure? Yes/No

C 4. Trees and Crops

C 4.1 Is there any tree/plant that might be affected? Yes/no…… Total estimated number by size……?

C 4.2 Is there any social forestry /plantation project that would be affected? Yes/no……

C 4.3 Is there any common fruit bearing tree that would be affected? Yes/no……
Species……..

C 4.4 Any agricultural land included with in the subproject footprint? Yes/no……
If yes, please provide necessary information regarding productivity of land, type and quantity of Crop that might be affected and market value
……
……..

C 5. Is there any Community Resource Property that would be affected?
Yes/No..... Please Specify…….. Who are the beneficiaries of the affected Community Resource? What is their reaction- Positive/negative?.....
Did they support the project?. Yes/No.....What are the reasons to support/ stand against the project?
……
……..

C6. Is there any Natural Resource that might be affected? Example: Social forest, Beel, Depression area, Grazing field, Wet-land, etc Yes/No……
If yes, please describe regarding dependency on the Affected Resources
……
……
……
……
C7. **Tribal Peoples**

C 7.1 Is there any community of Tribal Peoples residing within or adjacent the project site? Yes/No……..For how long .....?

C 7.2 Any Households of Tribal Peoples would be affected? Yes/No……
If yes, how many families would be affected?.....

C 7.2 Is there any way that proposed project may pose any threat to cultural tradition and way of life of Tribal Peoples? Yes/No……

C 8 Beneficiaries

C 8.1 Who are the Beneficiaries? How they would be benefited by the subproject?
□ Access to health facilities/services? Yes/No.....
□ Better access to schools, education and communication? Yes/No.....
□ Project activities would provide income generating source. Yes/No..... Please describe……
……
□ Shall subproject promote marketing opportunities of the local products? Yes/No…… If yes, how would that happen? Please elaborate
……

□ Are people ready to co-operate with the project? Yes/No.....

Please elaborate the reasons ……

C 9 How will the subproject create opportunities for Beneficiaries?

1. Prepared by (Name): ……   ***Signature:***…….. ***Date:*** ……
2. Upazila Project Implementation Committee   District: …… Upazila: ……..   Name of the Committee Head (UNO): ……..   01. Names of Committee Members participated in Screening   02.
3. Union Project Implementation Committee   District: …… Upazila: ……..   Name of the Committee Head (Chairman): ……..   01. Names of Committee Members participated in Screening:

Annex H: Details of the ECoPs

ECoP 1: Waste Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
General Waste	Soil and water pollution from the improper management of wastes and excess materials from the construction sites.	The Contractor shall • Develop waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food waste etc.) prior to commencing of construction and submit to DSM for approval. • Organize disposal of all wastes generated during construction in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact. • Minimize the production of waste materials by 3R (Reduce, Recycle and Reuse) approach. • Segregate and reuse or recycle all the wastes, wherever practical. • Prohibit burning of solid waste • Collect and transport non-hazardous wastes to all the approved disposal sites. Vehicles transporting solid waste shall be covered with tarps or nets to prevent spilling waste along the route • Train and instruct all personnel in waste management practices and procedures as a component of the environmental induction process. • Provide refuse containers at each worksite. • Request suppliers to minimize packaging where practicable. • Place a high emphasis on good housekeeping practices. • Maintain all construction sites in a cleaner, tidy and safe condition and provide and maintain appropriate facilities as temporary storage of all wastes before transportation and final disposal.
Hazardous Waste	Health hazards and environmental impacts due to improper waste management practices	The Contractor shall • Collect chemical wastes in 200 liter drums (or similar sealed container), appropriately labeled for safe transport to an approved chemical waste depot. • Store, transport and handle all chemicals avoiding potential environmental pollution. • Store all hazardous wastes appropriately in bunded areas away from water courses. • Make available Material Safety Data Sheets (MSDS) for hazardous materials on-site during construction. • Collect hydrocarbon wastes, including lube oils, for safe transport off-site for reuse, recycling, treatment or disposal at approved locations.

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		• Construct concrete or other impermeable flooring to prevent seepage in case of spills.

ECoP 2: Fuels and Hazardous Substances Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Fuels and hazardous goods	Materials used in construction have a potential to be a source of contamination. Improper storage and handling of fuels, lubricants, chemicals and hazardous goods/materials on-site, and potential spills from these goods may harm the environment or health of construction workers.	The Contractor shall • Prepare spill control procedures and submit the plan for DSM approval. • Train the relevant construction personnel in handling of fuels and spill control procedures. • Store dangerous goods in bunded areas on a top of a sealed plastic sheet away from watercourses. • Refueling shall occur only within bunded areas. • Make available MSDS for chemicals and dangerous goods on-site. • Transport waste of dangerous goods, which cannot be recycled, to a designated disposal site approved by DoE. • Provide absorbent and containment material (e.g., absorbent matting) where hazardous material are used and stored and personnel trained in the correct use. • Provide protective clothing, safety boots, helmets, masks, gloves, goggles, to the construction personnel, appropriate to materials in use. • Make sure all containers, drums, and tanks that are used for storage are in good condition and are labeled with expiry date. Any container, drum, or tank that is dented, cracked, or rusted might eventually leak. Check for leakage regularly to identify potential problems before they occur. • Store hazardous materials above flood plain level. • Put containers and drums in temporary storages in clearly marked areas, where they will not be run over by vehicles or heavy machinery. The area shall preferably slope or drain to a safe collection area in the event of a spill. • Put containers and drums in permanent storage areas on an impermeable floor that slopes to a safe collection area in the event of a spill or leak. • Take all precautionary measures when handling and storing fuels and lubricants, avoiding environmental pollution. • Avoid the use of material with greater potential for contamination by substituting them with more environmentally friendly materials.

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		• Return the gas cylinders to the supplier. However, if they are not empty prior to their return, they must be labeled with the name of the material they contained or contain, information on the supplier, cylinder serial number, pressure, their last hydrostatic test date, and any additional identification marking that may be considered necessary.

ECoP 3: Water Resources Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Hazardous Material and Waste	Water pollution from the storage, handling and disposal of hazardous materials and general construction waste, and accidental spillage.	The Contractor shall • Follow the management guidelines proposed in EC0Ps 1 and 2. • Minimize the generation of sediment, oil and grease, excess nutrients, organic matter, litter, debris and any form of waste (particularly petroleum and chemical wastes). These substances must not enter waterways, storm water systems or underground water tables.
Discharge from Construction sites	During construction both surface and groundwater quality may be deteriorated due to construction activities in the river, sewerages from construction sites and work camps. The construction works will modify groundcover and topography changing the surface water drainage patterns of the area including infiltration and storage of storm water. These changes in hydrological regime lead to increased rate of runoff, increase in sediment and contaminant loading, increased flooding, groundwater contamination, and effect habitat of fish and other aquatic biology.	The Contractor shall • Install temporary drainage works (channels and bunds) in areas required for sediment and erosion control and around storage areas for construction materials • Install temporary sediment basins, where appropriate, to capture sediment-laden run-off from site • Divert runoff from undisturbed areas around the construction site • Stockpile materials away from drainage lines • Prevent all solid and liquid wastes entering waterways by collecting solid waste, oils, chemicals, bitumen spray waste and wastewaters from brick, concrete and asphalt cutting where possible and transport to an approved waste disposal site or recycling depot • Wash out ready-mix concrete agitators and concrete handling equipment at washing facilities off site or into approved bunded areas on site. Ensure that tires of construction vehicles are cleaned in the washing bay (constructed at the entrance of the construction site) to remove the mud from the wheels. This shall be done in every exit of each construction vehicle to ensure the local roads are kept clean.
Soil Erosion and siltation	Soil erosion and dust from the material stockpiles will	The Contractor shall

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
	increase the sediment and contaminant loading of surface water bodies.	• Stabilize the cleared areas not used for construction activities with vegetation or appropriate surface water treatments as soon as practicable following earthwork to minimize erosion • Ensure that roads used by construction vehicles are swept regularly to remove sediment • Water the material stockpiles, access roads and bare soils on an as required basis to minimize dust. Increase the watering frequency during periods of high risk (e.g. high winds)
Construction activities in water bodies	Construction works in the water bodies will increase sediment and contaminant loading, and effect habitat of fish and other aquatic biology.	The Contractor shall • Dewater sites by pumping water to a sediment basin prior to release off site – do not pump directly off site • Monitor the water quality in the runoff from the site or areas affected by dredge plumes, and improve work practices as necessary • Protect water bodies from sediment loads by silt screen or bubble curtains or other barriers • Minimize the generation of sediment, oil and grease, excess nutrients, organic matter, litter, debris and any form of waste (particularly petroleum and chemical wastes). These substances must not enter waterways, storm water systems or underground water tables. • Use environment friendly and nontoxic slurry during construction of piles to discharge into the river. • Reduce infiltration of contaminated drainage through storm water management design • Do not discharge cement and water curing used for cement concrete directly into water courses and drainage inlets.
Drinking water	Groundwater at shallow depths is contaminated with arsenic and hence not suitable for drinking purposes.	The Contractor shall • Pumping of groundwater shall be from deep aquifers of more than 300 m to supply arsenic free water. Safe and sustainable discharges are to be ascertained prior to selection of pumps. • Tube wells will be installed with due regard for the surface environment, protection of groundwater from surface contaminants, and protection of aquifer cross contamination • All tube wells, test holes, monitoring wells that are no longer in use or needed shall be properly decommissioned.
	Depletion and pollution of groundwater resources	• Install monitoring wells both upstream and downstream areas near construction yards and construction camps to regularly monitor the water quality and water levels. • Protect groundwater supplies of adjacent lands

ECoP 4: Drainage Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Excavation and earth works, and construction yards	Lack of proper drainage for rainwater/liquid waste or wastewater owing to the construction activities harms environment in terms of water and soil contamination, and mosquito growth.	The Contractor shall • Prepare a program for prevent/avoid standing waters, which DSM will verify in advance and confirm during implementation • Provide alternative drainage for rainwater if the construction works/earth-fillings cut the established drainage line • Establish local drainage line with appropriate silt collector and silt screen for rainwater or wastewater connecting to the existing established drainage lines already there • Rehabilitate road drainage structures immediately if damaged by contractors' road transports. • Build new drainage lines as appropriate and required for wastewater from construction yards connecting to the available nearby recipient water bodies. Ensure wastewater quality conforms to the relevant standards provided by DoE, before it being discharged into the recipient water bodies. • Ensure the internal roads/hard surfaces in the construction yards/construction camps that generate has storm water drainage to accommodate high runoff during downpour and that there is no stagnant water in the area at the end of the downpour. • Construct wide drains instead of deep drains to avoid sand deposition in the drains that require frequent cleaning. • Provide appropriate silt collector and silt screen at the inlet and manholes and periodically clean the drainage system to avoid drainage congestion. • Protect natural slopes of drainage channels to ensure adequate storm water drains. • Regularly inspect and maintain all drainage channels to assess and alleviate any drainage congestion problem. • Reduce infiltration of contaminated drainage through storm water management design.
Ponding of water	Health hazards due to mosquito breeding	The Contractor shall • Do not allow ponding/storage of water especially near the waste storage areas and construction camps • Discard all the storage containers that are capable of storing of water, after use or store them in inverted position.

ECoP 5: Soil Quality Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Filling of Sites with dredge spoils	Soil contamination will occur from drainage of dredged spoils	The Contractor shall • Ensure that dredged sand used for land filling shall be free of pollutants. Prior to filling, sand quality shall be tested to confirm whether soil is pollution free. Sediments shall be properly compacted. Top layer shall be the 0.5 m thick clay on the surface and boundary slopes along with grass. Side Slope of Filled Land of 1:2 shall be constructed by suitable soils with proper compaction as per design. Slope surface shall be covered by top soils/ cladding materials (0.5m thick) and grass turfing with suitable grass. • Leaching from the sediments shall be contained to seep into the subsoil or shall be discharged into settling lagoons before final disposal. • No sediment laden water in the adjacent lands near the construction sites, and/or wastewater of suspended materials excessive of 200mg/l from dredge spoil storage/use area in the adjacent agricultural lands.
Storage of hazardous and toxic chemicals	Spillage of hazardous and toxic chemicals will contaminate the soils	The Contractor shall • Strictly manage the wastes management plans proposed in ECP1 and storage of materials in ECP2 • Construct appropriate spill contaminant facilities for all fuel storage areas • Establish and maintain a hazardous materials register detailing the location and quantities of hazardous substances including the storage, use of disposals • Train personnel and implement safe work practices for minimizing the risk of spillage • Identify the cause of contamination, if it is reported, and contain the area of contamination. The impact may be contained by isolating the source or implementing controls around the affected site • Remediate the contaminated land using the most appropriate available method to achieve required commercial/industrial guideline validation results.
Construction material stock piles	Erosion from construction material stockpiles may contaminate the soils	The Contractor shall • Protect the toe of all stockpiles, where erosion is likely to occur, with silt fences, straw bales or bunds.

ECoP 6: Erosion and Sediment Control

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Clearing of construction sites	Cleared areas and slopes are susceptible for erosion of top soils that affects the	The Contractor shall • Reinstate and protect cleared areas as soon as possible.

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
	growth of vegetation which causes ecological imbalance	• Mulch to protect batter slopes before planting • Cover unused area of disturbed or exposed surfaces immediately with mulch/grass turfings/tree plantations.
Construction activities and material stockpiles	The impact of soil erosion are (i) Increased run off and sedimentation causing a greater flood hazard to the downstream, (ii) destruction of aquatic environment in nearby lakes, streams, and reservoirs caused by erosion and/or deposition of sediment damaging the spawning grounds of fish, and (iii) destruction of vegetation by burying or gullying.	The Contractor shall • Locate stockpiles away from drainage lines • Protect the toe of all stockpiles, where erosion is likely to occur, with silt fences, straw bales or bunds • Remove debris from drainage paths and sediment control structures • Cover the loose sediments and water them if required • Divert natural runoff around construction areas prior to any site disturbance • Install protective measures on site prior to construction, for example, sediment traps • Control drainage through a site in protected channels or slope drains • Install 'cut off drains' on large cut/fill batter slopes to control water runoff speed and hence erosion • Observe the performance of drainage structures and erosion controls during rain and modify as required.

ECoP 7: Top Soil Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Land clearing and earth works	Earthworks will impact the fertile top soils that are enriched with nutrients required for plant growth or agricultural development	The Contractor shall • Strip the top soil to a depth of 15 cm and store in stock piles of height not exceeding 2m. • Remove unwanted materials from top soil like grass, roots of trees and similar others. • The stockpiles will be done in slopes of 2:1 to reduce surface runoff and enhance percolation through the mass of stored soil. • Locate topsoil stockpiles in areas outside drainage lines and protect from erosion. • Construct diversion channels and silt fences around the topsoil stockpiles to prevent erosion and loss of topsoil. • Spread the topsoil to maintain the physico-chemical and biological activity of the soil. The stored top soil will be utilized for covering all disturbed area and along the proposed plantation sites • Prior to the re-spreading of topsoil, the ground surface will be ripped to assist the bunding of the soil layers, water penetration and revegetation.
Transport	Vehicular movement outside ROW or temporary	The Contractor shall

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
	access roads will affect the soil fertility of the agricultural lands	• Limit equipment and vehicular movements to within the approved construction zone • Construct temporary access tracks to cross concentrated water flow lines at right angles • Plan construction access to make use, if possible, of the final road alignment • Use vehicle-cleaning devices, for example, ramps or wash down areas.

ECoP 8: Topography and Landscaping

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Land clearing and earth works	Flood plains of the existing Project area will be affected by the construction of various project activities. Construction activities especially earthworks will change topography and disturb the natural rainwater/flood water drainage as well as will change the local landscape.	The Contractor shall • Ensure the topography of the final surface of all raised lands (construction yards, approach roads, access roads, bridge end facilities, etc.) are conducive to enhance natural draining of rainwater/flood water; • Keep the final or finished surface of all the raised lands free from any kind of depression that insists water logging • Undertake mitigation measures for erosion control/prevention by grass-turfing and tree plantation, where there is a possibility of rain-cut that will change the shape of topography. • Cover immediately the uncovered open surface that has no use of construction activities with grass-cover and tree plantation to prevent soil erosion and bring improved landscaping.

ECoP 9: Sand Extraction

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Sand extraction	Sand extraction can potentially impact the aquatic habitat, water quality, and key aquatic species and their food availability.	The Contractor shall • not extract sand from the river bed in long continuous stretches; alternate patches of river bed will be left undisturbed to minimize the potentially negative impacts on the aquatic habitat. • not collect large quantities of sand from any single location • not excavate deeper than 3 m at any single location. • not carry out sand extraction near chars that have sensitive Habitats • not carry out sand extraction during the night particularly near the chars • obtain approval from DSM before starting sand extraction from any location.

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		• carry out sand extraction from sand bars to the extent possible. • maintain record of all sand extraction (quantities, location shown on map, timing, any sighting of key species) • provide silt fences, sediment barriers or other devices around the extraction areas to prevent migration of sediment rich water in to the river channels. • refuel of barges and boats with a proper care to avoid any spills. • make available spill kits and other absorbent material at refueling points on the barges. • properly collect, treat and dispose the bilge water from of barges, and boats. • regularly service all waterborne plant as per the manufacturer's guidelines and be inspected daily prior to operation. DSM will: • carry out survey of the area prior to sand extraction • identify any sensitive receptors/habitats (eg, turtle nesting area, bird colony) at or near the proposed sand extraction locations. • determine 'no-go' areas for sand extraction, based upon the above survey, • monitor the activity to ensure that the contractor complies with the conditions described earlier. • survey the area after sand extraction to identify any leftover impacts.

ECoP 10: Air Quality Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Construction vehicular traffic	Air quality can be adversely affected by vehicle exhaust emissions and combustion of fuels.	The Contractor shall • Fit vehicles with appropriate exhaust systems and emission control devices. Maintain these devices in good working condition. • Operate the vehicles in a fuel-efficient manner • Cover haul vehicles carrying dusty materials moving outside the construction site Impose speed limits on all vehicle movement at the worksite to reduce dust emissions • Control the movement of construction traffic • Water construction materials prior to loading and transport • Service all vehicles regularly to minimize emissions • Limit the idling time of vehicles not more than 2 minutes.

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Construction machinery	Air quality can be adversely affected by emissions from machinery and combustion of fuels.	The Contractor shall • Fit machinery with appropriate exhaust systems and emission control devices. Maintain these devices in good working condition in accordance with the specifications defined by their manufacturers to maximize combustion efficiency and minimize the contaminant emissions. Proof or maintenance register shall be required by the equipment suppliers and contractors/subcontractors • Focus special attention on containing the emissions from generators • Machinery causing excess pollution (e.g. visible smoke) will be banned from construction sites • Service all equipment regularly to minimize emissions • Provide filtering systems, duct collectors or humidification or other techniques (as applicable) to the concrete batching and mixing plant to control the particle emissions in all its stages, including unloading, collection, aggregate handling, cement dumping, circulation of trucks and machinery inside the installations
Construction activities	Dust generation from construction sites, material stockpiles and access roads is a nuisance in the environment and can be a health hazard.	The Contractor shall • Water the material stockpiles, access roads and bare soils on an as required basis to minimize the potential for environmental nuisance due to dust. Increase the watering frequency during periods of high risk (e.g. high winds). Stored materials such as gravel and sand shall be covered and confined to avoid their being wind-drifted • Minimize the extent and period of exposure of the bare surfaces • Reschedule earthwork activities or vegetation clearing activities, where practical, if necessary to avoid during periods of high wind and if visible dust is blowing off-site • Restore disturbed areas as soon as practicable by vegetation/grass-turfing • Store the cement in silos and minimize the emissions from silos by equipping them with filters. • Establish adequate locations for storage, mixing and loading of construction materials, in a way that dust dispersion is prevented because of such operations • Crushing of rocky and aggregate materials shall be wet-crushed, or performed with particle emission control systems.

ECoP 11: Noise and Vibration Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Construction vehicular traffic	Noise quality will be deteriorated due to vehicular traffic	The Contractor shall • Maintain all vehicles in order to keep it in good working order in accordance with manufactures maintenance procedures • Make sure all drivers will comply with the traffic codes concerning maximum speed limit, driving hours, etc. • Organize the loading and unloading of trucks, and handling operations for the purpose of minimizing construction noise on the work site
Construction machinery	Noise and vibration may have an impact on people, property, fauna, livestock and the natural environment.	The Contractor shall • Appropriately site all noise generating activities to avoid noise pollution to local residents • Use the quietest available plant and equipment • Modify equipment to reduce noise (for example, noise control kits, lining of truck trays or pipelines) • Maintain all equipment in order to keep it in good working order in accordance with manufactures maintenance procedures. Equipment suppliers and contractors shall present proof of maintenance register of their equipment. • Install acoustic enclosures around generators to reduce noise levels. • Fit high efficiency mufflers to appropriate construction equipment • Avoid the unnecessary use of alarms, horns and sirens.
Construction activities	Noise and vibration may have an impact on people, property, fauna, livestock and the natural environment.	The Contractor shall • Notify adjacent landholders prior any typical noise events outside of daylight hours • Educate the operators of construction equipment on potential noise problems and the techniques to minimize noise emissions • Employ best available work practices on-site to minimize occupational noise levels • Install temporary noise control barriers where appropriate • Notify affected people if major noisy activities will be undertaken, e.g. pile driving • Plan activities on site and deliveries to and from site to minimize impact • Monitor and analyze noise and vibration results and adjust construction practices as required. • Avoid undertaking the noisiest activities, where possible, when working at night near the residential areas.

ECoP 12: Protection of Flora

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Vegetation clearance	Local flora is important to provide shelters for the birds, offer fruits and/or timber/fire wood, protect soil erosion and overall keep the environment very friendly to human living. As such damage to flora has wide range of adverse environmental impacts.	The Contractor shall • Reduce disturbance to surrounding vegetation • Use appropriate type and minimum size of machine to avoid disturbance to adjacent vegetation. • Get approval from supervision consultant for clearance of vegetation. • Make selective and careful pruning of trees where possible to reduce need of tree removal. • Control noxious weeds by disposing of at designated dump site or burn on site. • Clear only the vegetation that needs to be cleared in accordance with the plans. These measures are applicable to both the construction areas as well as to any associated activities such as sites for stockpiles, disposal of fill and construction of diversion roads, etc. • Do not burn off cleared vegetation – where feasible, chip or mulch and reuse it for the rehabilitation of affected areas, temporary access tracks or landscaping. Mulch provides a seed source, can limit embankment erosion, retains soil moisture and nutrients, and encourages regrowth and protection from weeds. • Return topsoil and mulched vegetation (in areas of native vegetation) to approximately the same area of the roadside it came from. • Avoid work within the drip-line of trees to prevent damage to the tree roots and compacting the soil. • Minimize the length of time the ground is exposed or excavation left open by clearing and re-vegetate the area at the earliest practically possible. • Ensure excavation works occur progressively and revegetation done at the earliest • Provide adequate knowledge to the workers regarding nature protection and the need of avoid felling trees during construction • Supply appropriate fuel in the work caps to prevent fuel wood collection

ECoP 13: Protection of Fauna

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Construction activities	The location of construction activities can result in the loss of wild life habitat and habitat quality.	The Contractor shall • Limit the construction works within the designated sites allocated to the contractors

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		• Check the site for animals trapped in, or in danger from site works and use a qualified person to relocate the animal.
	Impact on migratory birds, its habitat and its active nests	The Contractor shall • Not be permitted to destruct active nests or eggs of migratory birds • Minimize the tree removal during the bird breeding season. If works must be continued during the bird breeding season, a nest survey will be conducted by a qualified biologist prior to commence of works to identify and located active nests • Minimize the release of oil, oil wastes or any other substances harmful to migratory birds to any waters or any areas frequented by migratory birds.
Vegetation clearance	Clearance of vegetation may impact shelter, feeding and/or breeding and/or physical destruction and severing of habitat areas	The Contractor shall • Restrict the tree removal to the minimum required. • Retain tree hollows on site, or relocate hollows, where appropriate • Leave dead trees where possible as habitat for fauna • Fell the hollow bearing trees in a manner which reduces the potential for fauna mortality. Felled trees will be inspected after felling for fauna and if identified and readily accessible will be removed and relocated or rendered assistance if injured. After felling, hollow bearing trees will remain unmoved overnight to allow animals to move of their own volition.
Construction camps	Illegal poaching	The Contractor shall • Provide adequate knowledge to the workers regarding protection of flora and fauna, and relevant government regulations and punishments for illegal poaching.

ECoP 14: Protection of Fisheries

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Construction activities in River and Floodplain Water	The main potential impacts to fisheries are hydrocarbon spills and leaks from riverine transport and disposal of wastes into the river and floodplain water	The Contractor shall • Ensure the riverine transports, vessels and ships are well maintained and do not have oil leakage to contaminate river water. • Contain oil immediately on river in case of accidental spillage from vessels and ships and in this regard, make an emergency oil spill containment plan to be

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		supported with enough equipment, materials and human resources • Do not dump wastes, be it hazardous or non-hazardous into the nearby water bodies or in the river.
	The main potential impacts to aquatic flora and fauna River are increased suspended solids from earthworks erosion, sanitary discharge from work camps, and hydrocarbon spills	The Contractor shall • follow mitigation measures proposed in ECoP 3 : Water Resources Management and EC4: Drainage Management
Construction activities on the land	Filling of ponds for site preparation will impact the fishes	The Contractor shall • Inspect any area of a water body containing fish that is temporarily isolated for the presence of fish, and all fish shall be captured and released unharmed in adjacent fish habitat • Install and maintain fish screens etc. on any water intake with drawing water from any water body that contain fish.

ECoP 15: Road Transport and Road Traffic Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Construction vehicular traffic	Increased traffic use of road by construction vehicles will affect the movement of normal road traffics and the safety of the road-users.	The Contractor shall • Prepare and submit a traffic management plan to the DSM for his approval at least 30 days before commencing work on any project component involved in traffic diversion and management. • Include in the traffic management plan to ensure uninterrupted traffic movement during construction: detailed drawings of traffic arrangements showing all detours, temporary road, temporary bridges temporary diversions, necessary barricades, warning signs / lights, and road signs. • Provide signs at strategic locations of the roads complying with the schedules of signs contained in the Bangladesh Traffic Regulations. • Install and maintain a display board at each important road intersection on the roads to be used during construction, which shall clearly show the following information in Bangla: o Location: Village name o Duration of construction period o Period of proposed detour / alternative route o Suggested detour route map

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		○ Name and contact address/telephone number of the concerned personnel ○ Name and contact address / telephone number of the Contractor ○ Inconvenience is sincerely regretted.
	Accidents and spillage of fuels and chemicals	The Contractor shall • Restrict truck deliveries, where practicable, to day time working hours. • Restrict the transport of oversize loads. • Operate road traffics/transport vehicles, if possible, to nonpeak periods to minimize traffic disruptions. • Enforce on-site speed limit

ECoP 16: River Transport management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Construction activities in River	The presence of construction and dredging barges, pipe lines and other construction activities in the river can cause hindrance and risks to the river traffic.	The Contractor shall • Not obstruct other normal riverine transport while doing riverine transport and works • Identify the channel to be followed clearly using • navigation aids such as buoys, beacons, and lighting • Provide proper buoyage, navigation lights and markings for bridge and dredging works to guide the other normal riverine transport • Keep regular and close contacts with Bangladesh Inland Water Transport Authority (BIWTA) regarding their needs during construction of the project • Plan the river transport and transportation of large loads in coordination with BIWTA to avoid traffic congestions. • Provide signage for river traffic conforming to the BIWTA requirements • Position the dredge and pipeline in such a way that no disruption to the channel traffic will occur
	Accidents	The Contractor shall • Prepare an emergency plan for dealing with accidents causing accidental sinking of the vessels and ships • Ensure sufficient equipment and staffs available to execute the emergency plans • Provide appropriate lighting to barges and construction vessels.

ECoP 17: Construction Camp Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Siting and Location of construction camps	Campsites for construction workers are the important locations that have significant impacts such as health and safety hazards on local resources and infrastructure of nearby communities.	The Contractor shall • Locate the construction camps at areas which are acceptable from environmental, cultural or social point of view. • Consider the location of construction camps away from communities in order to avoid social conflict in using the natural resources such as water or to avoid the possible adverse impacts of the construction camps on the surrounding communities. • Submit to the DSM for approval a detailed layout plan for the development of the construction camp showing the relative locations of all temporary buildings and facilities that are to be constructed together with the location of site roads, fuel storage areas (for use in power supply generators), solid waste management and dumping locations, and drainage facilities, prior to the development of the construction camps. • Local authorities responsible for health, religious and security shall be duly informed on the set up of camp facilities so as to maintain effective surveillance over public health, social and security matters
Construction Camp Facilities	Lack of proper infrastructure facilities, such as housing, water supply and sanitation facilities will increase pressure on the local services and generate substandard living standards and health hazards.	The Contractor shall provide the following facilities in the campsites: • Adequate housing for all workers • Safe and reliable water supply. Water supply from deep tube wells of 300 m depth that meets the national standards • Hygienic sanitary facilities and sewerage system. The toilets and domestic waste water will be collected through a common sewerage. Provide separate latrines and bathing places for males and females with total isolation by wall or by location. The minimum number of toilet facilities required is one toilet for every ten persons. • Treatment facilities for sewerage of toilet and domestic wastes • Storm water drainage facilities. Both sides of roads are to be provided with shallow v drains to drain off storm water to a silt retention pond which shall be sized to provide a minimum of 20 minutes retention of storm water flow from the whole site. Channel all discharge from the silt retention pond to natural drainage via a grassed swale at least 20 meters in length with suitable longitudinal gradient. • Paved internal roads. Ensure with grass/vegetation coverage to be made of the use of top soil that there is no dust generation from the loose/exposed sandy

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		surface. Pave the internal roads of at least haring-bond bricks to suppress dusts and to work against possible muddy surface during monsoon. • Provide child crèches for women working construction site. The crèche shall have facilities for dormitory, kitchen, indoor and outdoor play area. Schools shall be attached to these crèches so that children are not deprived of education whose mothers are construction workers • Provide in-house community/common entertainment facilities dependence of local entertainment outlets by the construction camps to be discouraged/prohibited to the extent possible.
Disposal of waste	Management of wastes is crucial to minimize impacts on the environment	The Contractor shall • Ensure proper collection and disposal of solid wastes within the construction camps • Insist waste separation by source; organic wastes in one pot and inorganic wastes in another pot at household level. • Store inorganic wastes in a safe place within the household and clear organic wastes on daily basis to waste collector. Establish waste collection, transportation and disposal systems with the manpower and equipment/vehicles needed. • Dispose organic wastes in a designated safe place on daily basis. At the end of the day cover the organic wastes with a thin layer of sand so that flies, mosquitoes, dogs, cats, rats, are not attracted. One may dig a large hole to put organic wastes in it; take care to protect groundwater from contamination by leachate formed due to decomposition of wastes. Cover the bed of the pit with impervious layer of materials (clayey or thin concrete) to protect groundwater from contamination. • Locate the garbage pit/waste disposal site min 500 m away from the residence so that peoples are not disturbed with the odor likely to be produced from anaerobic decomposition of wastes at the waste dumping places. Encompass the waste dumping place by fencing and tree plantation to prevent children to enter and play with. • Do not establish site specific landfill sites. All solid waste will be collected and removed from the work camps and disposed in approval waste disposal sites.
Fuel supplies for cooking purposes	Illegal sourcing of fuel wood by construction workers will impact the natural flora and fauna	The Contractor shall • Provide fuel to the construction camps for their domestic purpose, in order to discourage them to use fuel wood or other biomass.

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		• Made available alternative fuels like natural gas or kerosene on ration to the workforce to prevent them using biomass for cooking. • Conduct awareness campaigns to educate workers on preserving the protecting the biodiversity and wildlife of the project area, and relevant government regulations and punishments on wildlife protection.
Health and Hygiene	There will be a potential for diseases to be transmitted including malaria, exacerbated by inadequate health and safety practices. There will be an increased risk of work crews spreading sexually transmitted infections and HIV/AIDS.	The Contractor shall • Provide adequate health care facilities within construction sites. • Provide first aid facility round the clock. Maintain stock of medicines in the facility and appoint fulltime designated first aider or nurse. • Provide ambulance facility for the laborers during emergency to be transported to nearest hospitals. • Initial health screening of the laborers coming from outside areas • Train all construction workers in basic sanitation and health care issues and safety matters, and on the specific hazards of their work • Provide HIV awareness programming, including STI (sexually transmitted infections) and HIV information, education and communication for all workers on regular basis • Complement educational interventions with easy access to condoms at campsites as well as voluntary counseling and testing • Provide adequate drainage facilities throughout the camps to ensure that disease vectors such as stagnant water bodies and puddles do not form. Regular mosquito repellant sprays during monsoon. • Carryout short training sessions on best hygiene practices to be mandatorily participated by all workers. Place display boards at strategic locations within the camps containing messages on best hygienic practices
Safety	In adequate safety facilities to the construction camps may create security problems and fire hazards	The Contractor shall • Provide appropriate security personnel (police / home guard or private security guards) and enclosures to prevent unauthorized entry in to the camp area. • Maintain register to keep a track on a head count of persons present in the camp at any given time. • Encourage use of flameproof material for the construction of labor housing / site office. Also, ensure that these houses/rooms are of sound construction and capable of withstanding wind storms/cyclones. • Provide appropriate type of firefighting equipment suitable for the construction camps

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		• Display emergency contact numbers clearly and prominently at strategic places in camps. • Communicate the roles and responsibilities of laborers in case of emergency in the monthly meetings with contractors
Site Restoration	Restoration of the construction camps to original condition requires demolition of construction camps.	The Contractor shall • Dismantle and remove from the site all facilities established within the construction camp including the perimeter fence and lockable gates at the completion of the construction work. • Dismantle camps in phases and as the work gets decreased and not wait for the entire work to be completed • Give prior notice to the laborers before demolishing their camps/units • Maintain the noise levels within the national standards during demolition activities • Different contractors shall be hired to demolish different structures to promote recycling or reuse of demolished material. • Reuse the demolition debris to a maximum extent. Dispose remaining debris at the designated waste disposal site. • Handover the construction camps with all built facilities as it is if agreement between both parties (contactor and land-owner) has been made so. • Restore the site to its condition prior to commencement of the works or to an agreed condition with the landowner. • Not make false promises to the laborers for future employment in O&M of the project.

ECoP 18: Cultural and Religious Issues

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Construction activities near religious and cultural sites	Disturbance from construction works to the cultural and religious sites, and contractors lack of knowledge on cultural issues cause social disturbances.	The Contractor shall • Communicate to the public through community consultation and newspaper announcements regarding the scope and schedule of construction, as well as certain construction activities causing disruptions or access restriction. • Do not block access to cultural and religious sites, wherever possible • Restrict all construction activities within the foot prints of the construction sites. • Stop construction works that produce noise (particularly during prayer time) shall there be any

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		mosque/religious/educational institutions close to the construction sites and users make objections. • Take special care and use appropriate equipment when working next to a cultural/religious institution. • Stop work immediately and notify the site manager if, during construction, an archaeological or burial site is discovered. It is an offence to recommence work in the vicinity of the site until approval to continue is given by the DSM/PIU. Provide separate prayer facilities to the construction workers. • Show appropriate behavior with all construction workers especially women and elderly people • Allow the workers to participate in praying during construction time • Resolve cultural issues in consultation with local leaders and supervision consultants • Establish a mechanism that allows local people to raise grievances arising from the construction process. • Inform the local authorities responsible for health, religious and security duly informed before commencement of civil works so as to maintain effective surveillance over public health, social and security matters

ECoP 19: Worker Health and Safety

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Best practices	Construction works may pose health and safety risks to the construction workers and site visitors leading to severe injuries and deaths. The population in the proximity of the construction site and the construction workers will be exposed to a number of (i) biophysical health risk factors, (e.g. noise, dust, chemicals, construction material, solid waste, waste water, vector transmitted diseases etc), (ii) risk factors resulting from human behavior (e.g. STD, HIV etc) and (iii)	The Contractor shall • Implement suitable safety standards for all workers and site visitors which shall not be less than those laid down on the international standards (e.g. International Labor Office guideline on 'Safety and Health in Construction; World Bank Group's 'Environmental Health and Safety Guidelines') and contractor's own national standards or statutory regulations, in addition to complying with the national standards of the Government of Bangladesh (e.g. `The Bangladesh Labor Code, 2006') • Provide the workers with a safe and healthy work environment, taking into account inherent risks in its particular construction activity and specific classes of hazards in the work areas, • Provide personal protection equipment (PPE) for workers, such as safety boots, helmets, masks, gloves, protective clothing, goggles, full-face eye shields, and ear protection. Maintain the PPE properly by cleaning dirty ones and replacing them with the damaged ones.

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
	road accidents from construction traffic.	• Safety procedures include provision of information, training and protective clothing to workers involved in hazardous operations and proper performance of their job • Appoint an environment, health and safety manager to look after the health and safety of the workers • Inform the local authorities responsible for health, religious and security duly informed before commencement of civil works and establishment of construction camps so as to maintain effective surveillance over public health, social and security matters.
	Child and pregnant labor	The Contractor shall • not hire children of less than 14 years of age and pregnant women or women who delivered a child within 8 preceding weeks, in accordance with the Bangladesh Labor Code, 2006
Accidents	Lack of first aid facilities and health care facilities in the immediate vicinity will aggravate the health conditions of the victims	• Provide health care facilities and first aid facilities are readily available. Appropriately equipped first-aid stations shall be easily accessible throughout the place of work • Document and report occupational accidents, diseases, and incidents. • Prevent accidents, injury, and disease arising from, associated with, or occurring in the course of work by minimizing, so far as reasonably practicable, the causes of hazards. In a manner consistent with good international industry practice. • Identify potential hazards to workers, particularly those that may be life-threatening and provide necessary preventive and protective measures. • Provide awareness to the construction drivers to strictly follow the driving rules • Provide adequate lighting in the construction area and along the roads
Construction Camps	Lack of proper infrastructure facilities, such as housing, water supply and sanitation facilities will increase pressure on the local services and generate substandard living standards and health hazards.	• The Contractor shall provide the following facilities in the campsites to improve health and hygienic conditions as mentioned in ECoP 17 Construction Camp Management • Adequate ventilation facilities • Safe and reliable water supply. Water supply from deep tube wells that meets the national standards • Hygienic sanitary facilities and sewerage system. The toilets and domestic waste water will be collected through a common sewerage. • Treatment facilities for sewerage of toilet and domestic wastes • Storm water drainage facilities. • Recreational and social facilities

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		• Safe storage facilities for petroleum and other chemicals in accordance with ECoP 2 • Solid waste collection and disposal system in accordance with ECP1. • Arrangement for trainings • Paved internal roads. • Security fence at least 2 m height. • Sick bay and first aid facilities
Water and sanitation facilities at the construction sites	Lack of Water sanitation facilities at construction sites cause inconvenience to the construction workers and affect their personal hygiene.	• The contractor shall provide portable toilets at the construction sites, if about 25 people are working the whole day for a month. Location of portable facilities shall be at least 6 m away from storm drain system and surface waters. These portable toilets shall be cleaned once a day and all the sewerage shall be pumped from the collection tank once a day and shall be brought to the common septic tank for further treatment. • Contractor shall provide bottled drinking water facilities to the construction workers at all the construction sites.
Other ECoPs	Potential risks on health and hygiene of construction workers and general public	The Contractor shall follow the following ECPs to reduce health risks to the construction workers and nearby community • ECoP 2: Fuels and Hazardous Goods Management • ECoP 4: Drainage Management • ECoP 10: Air Quality Management • ECoP 11: Noise and Vibration Management • ECoP 15: Road Transport and Road Traffic Management • ECoP 16: River Transport management
Trainings	Lack of awareness and basic knowledge in health care among the construction workforce, make them susceptible to potential diseases.	The Contractor shall • Train all construction workers in basic sanitation and health care issues (e.g., how to avoid malaria and transmission of sexually transmitted infections (STI) HIV/AIDS. • Train all construction workers in general health and safety matters, and on the specific hazards of their work Training shall consist of basic hazard awareness, site specific hazards, safe work practices, and emergency procedures for fire, evacuation, and natural disaster, as appropriate. • Commence the malaria, HIV/AIDS and STI education campaign before the start of the construction phase and complement it with by a strong condom marketing, increased access to condoms in the area as well as to voluntary counseling and testing. • Implement malaria, HIV/AIDS and STI education campaign targeting all workers hired, international and national, female and male, skilled, semi- and unskilled occupations, at the time of recruitment and thereafter pursued throughout the construction phase on

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		ongoing and regular basis. This shall be complemented by easy access to condoms at the workplace as well as to voluntary counseling and testing.

Annex I: List of Attendee in the Stakeholder Consultations and Disclosure Workshop

a. Stakeholder Consultation Organized by LGED, Jashore

STACKHOLDER CONSULTATION

WORKSHOP ON WESTERN ECONOMIC CORRIDOR AND REGIONAL ENHANCMENT (WeCARE) Program

Venue: Conference Rook, LGED, Jashore
Date : 24/11/2019
Time : 10.00 a.m

Attendance Sheet

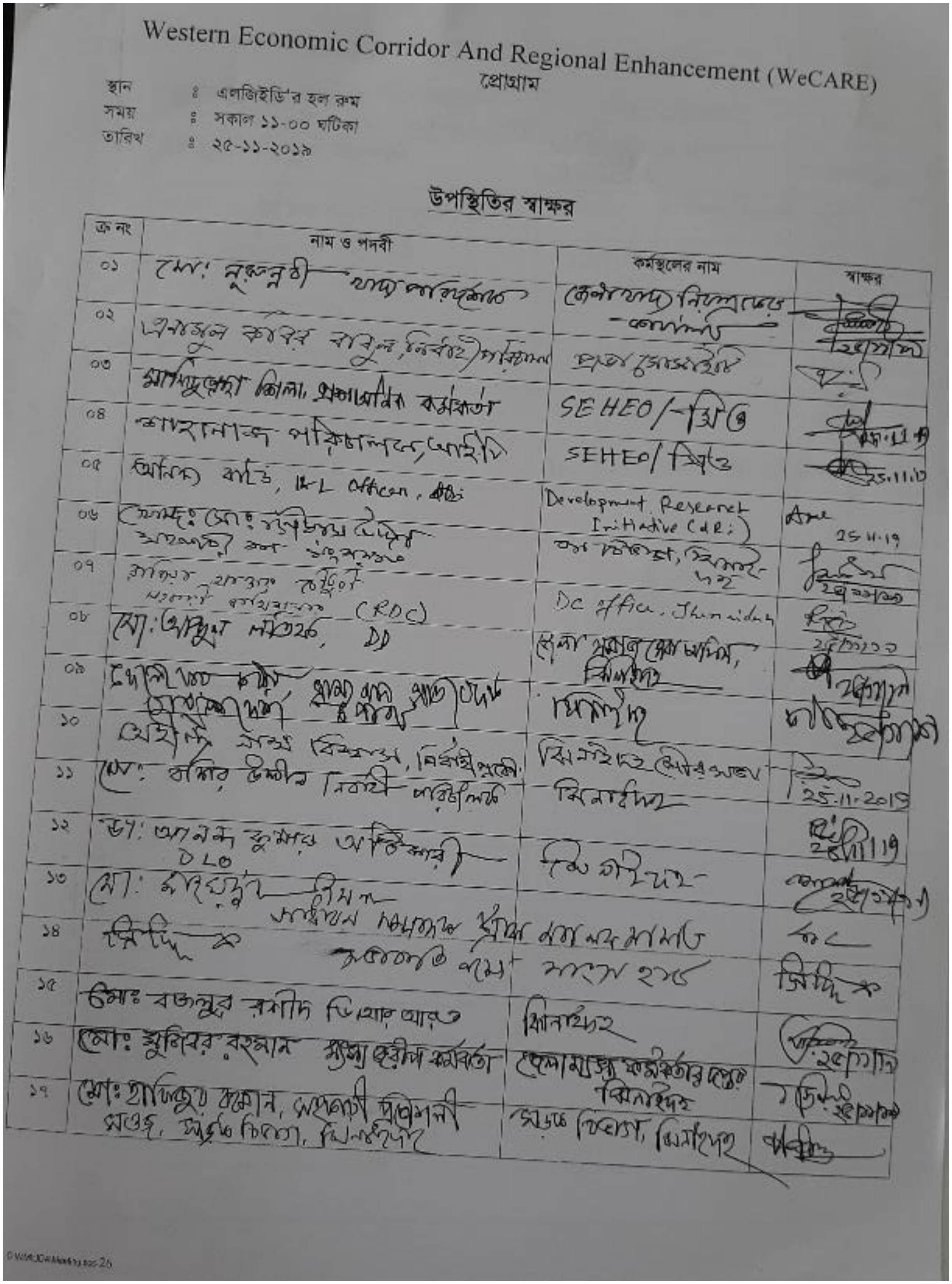
Sl. No.	Name	Designation	MobilkNo	Signature
1	MD. RAFIQUL HASAN	DC/Representative	01318-252901	
2	Md. Abu Sarowar	S.P/ Representative	01713374156	
3	S.M. Sharif Hasnon XEN J.P.S.	Mayor Jashore Paurashava /Representative	01711313911	
4	DR. F.A. HASAN	Representative Civil Surgeon DCS	01711-974263	
5		District Agriculture Extension Officer		
6		District Livestock Officer		
7		District Fisheries Officer		
8		District Social welfare Officer		
9		District Food Controller		
10	A.T.M. Golam Mahbub	District Youth Welfare Officer	01718014170	
11		President, Chamber of Commerce, Jashore		
12	Zahid Hasan Tukun	President Press Club	01740152211	
13		President Bus Truck Owners Association		
14		President, Export Import Association		
15		President of Labor Association (Mason, Piling etc)		

MD. HASAN HABIB ZSO. Jashore 01717863899

Brig Gen. Md Anisuzzaman Bhuiyan (Retd) World Bank Social Development Consultant

Sl. No.	Name	Designation	MobileNo	Signature
16		Representative of Customs		
17		President C&F Agent (Clearing and Forwarding)		
18	Md. Sazad Hossain Khan.	District Marketing Officer Department of Agriculture Marketing	01712197368	[signature] 24.11.19.
19		District Forest Officer		
20		Assistant Director, Environment, Forest and Climate Change		
21		Assistant Director, BIWTA		
22	Md. Azad Makn	President, Brick field Owners association	01711-143546	[signature]
23	SM Edris Alam	NGO Representative	01730349986	[signature]
24		Executive Engineer, BWDB, Jessore		
25		DoE Director (Representative)		
26		University Professors		
27		Executive Engineer RHD, Jessore		
28	Mirza Md. Iftekhar Ali	Executive Engineer LGED, Jessore	01708123281	[signature]
29	FAYAZUDDIN AHMAD ADVOCATE	LABOUR EXPERT, WORLD BANK	01979812304	[signature]
30	Md. Shahed Mahabub Chy	ESMF Expert World Bank	01779992017 Shahedbd@yahoo.com	[signature]
31	Hanna Maymuna	Social Safeguard Consultant, world bank	01630425757	[signature]
32	Marufa Akter	Gender Consultant, WB	01753410496	[signature]
33	Mamun-Ur-Rashid	SDE	01713504255	[signature]
34	Raisin Akhter Feroz	Environmental Specialist	01712-555517	[signature]
35.	Sabbir Ahmed Dhali	Research Associate	01704559990	[signature]
36.	Md. Ali Newaz Khan	Research Associate	01720442790	[signature]
37.	Md. Mahmudul Hasan	DRRO (Addl charge)	01711284044	[signature]
38	Golam Mortoza		01716704668	[signature]

b. Stakeholder Consultation Organized by LGED, Jhinaidaha



Western Economic Corridor And Regional Enhancement (WeCARE)

প্রোগ্রাম

স্থান : এলজিইডি'র হল রুম

সময় : সকাল ১১-০০ ঘটিকা

তারিখ : ২৫-১১-২০১৯

উপস্থিতির স্বাক্ষর

ক্র নং	নাম ও পদবী	কর্মস্থলের নাম	স্বাক্ষর
০১	মো: নূরুন্নবী – খাদ্য পরিদর্শক	জেলা খাদ্য নিয়ন্ত্রকের কার্যালয়	[illegible]
০২	[illegible] কবির বাবুল, নির্বাহী পরিচালক	[illegible]	[illegible]
০৩	[illegible] জেলা প্রাথমিক কর্মকর্তা	SEHEO/ [illegible]	[illegible]
০৪	[illegible]	SEHEO/ [illegible]	[illegible]
০৫	[illegible], IL Officer, [illegible]	Development Research Initiative (dRi)	[illegible] 25.11.19
০৬	[illegible]	[illegible]	[illegible]
০৭	[illegible] (RDC)	DC office, Jhenaidah	[illegible]
০৮	মো: [illegible], DD	[illegible], ঝিনাইদহ	[illegible]
০৯	[illegible]	ঝিনাইদহ	[illegible]
১০	[illegible]	[illegible]	[illegible]
১১	মো: [illegible] নির্বাহী পরিচালক	[illegible] ঝিনাইদহ	[illegible] 25.11.2019
১২	ডা: [illegible] কুমার [illegible] DLO	[illegible]	[illegible]
১৩	মো: [illegible]	[illegible]	[illegible]
১৪	[illegible]	[illegible]	[illegible]
১৫	মো: [illegible] রশীদ [illegible]	ঝিনাইদহ	[illegible]
১৬	মো: [illegible] রহমান [illegible] কর্মকর্তা	জেলা [illegible] কর্মকর্তার দপ্তর ঝিনাইদহ	[illegible]
১৭	মো: [illegible], সহকারী প্রকৌশলী সওজ, [illegible], ঝিনাইদহ	সড়ক বিভাগ, ঝিনাইদহ	[illegible]

ক্র নং	নাম ও পদবী	কর্মস্থলের নাম	স্বাক্ষর
১৮	মো: [illegible] [illegible] সোশিওলজিস্ট [illegible]	[illegible]	[illegible]
১৯	এম,কে, আরিফুল ইসলাম	নির্বাহী প্রকৌশলী — এলজিইডি	[illegible]
২০	মো: মাহমুদ হাসান	সিনিয়র সহকারী প্রকৌ: LGED	[illegible]
২১	সাখাওয়াত হোসেন	সহকারী প্রকৌ: LGED	[illegible]
২২	নওরিন [illegible]	সহকারী প্রকৌ: (SupRD) LGED	[illegible]
২৩	সৈয়দ [illegible] আলী	SAE, LGED	[illegible]
২৪	মো: [illegible] হক	SAE, LGED	[illegible]
২৫	সিরাজ আহমেদ	AE, (BAIDP)xen, office	[illegible]
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c. Disclosure Workshop Organized by LGED, Jeshore

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

Western Economic Corridor & Regional Enhancement Program

Stakeholder Consultation on Environmental and Social Management Framework and Resettlement Policy Framework

ATTENDANCE SHEET

Venue :- RTC LGED, Jessore Date:-11-03-2020

Sl. No.	Name	Designation	Place of Posting	Signature	Mobile No.
1	Mirza Md Iftekhar Ali	XEN	LGED, Jashore		01713206629.
2	Md. Shariful Islam	XEN	LGED, Magura		0171 864565
3	Md. Monowar	XEN	LGED, Jhenaidah		01712-226142
4	Md. Ashraful Islam	XEN	LGED, Chuadanga		01749-493941
5	Md. Iqbal Kabir	UE	Sadar, Jashore		01712-214950
6	Md. Abu Sufian	UE	Bagherpara, Jashore		01742549899
7	Md. Abdul Matin	UE	Chowgacha, Jashore		01726-748253
8	MD. ROBIUL ISLAM	UE	Monirampur, Jashore		01708161485
9	Md. Abdul Mannan	UE	Keshabpur, Jashore		01712235073
10	Md. Kamrul Islam Sardar	UE	Abhoynagor, Jashore		01708161479
11	Shamol Ku. Bosu	UE	Jhikorgacha, Jashore		01711481885
12	M. M. Mamun Hasan	UE	Sharsha, Jashore		01771660057
13	Md. Abdullah Al Kabir	UE	Sadar, Magura		01766536263
14	Dinesh ch. Saha	UE	Shalikha, Magura		01711314947
15	Md. Rashedul hasan	UE	Sreepur, Magura		01708-161502
16	Md. Mohi uddin mia	UE	Mohammadpur, Magura		01711-589157

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

Western Economic Corridor & Regional Enhancement Program

Stakeholder Consultation on Environmental and Social Management Framework and Resettlement Policy Framework

ATTENDANCE SHEET

Venue :- RTC LGED, Jessore

Date:-11-03-2020

Sl. No.	Name	Designation	Place of Posting	Signature	Mobile No.
17	MD FOYSAL AHMED	UE	Sadar, Jhenaidah		01708161488
18	Md. Sanaul Haque	UE	Kaligonj,Jhenaidah		01711-588231
19	Md. Rowshan Habib	UE	Harinakundu, Jhenaidah		01716-034378
20	[illegible]	UE	Sailkupa, Jhenaidah		01993-950540
21	[illegible]	UE	Kotchandpur,Jhenaidah		01711261475
22	Salim Choudhury	UE	Moheshpur,Jhenaidah		01712906167
23	Md. Arifuddoula	UE	Sadar, Chuadanga		01708161476
24	Md. Mahbubul Hoque	UE	Damurhuda,Chuadanga		01725-405237
25	Md. Shaiful Islam Molla	UE	Jibonnagor,Chuadanga		01711168159
26	MD. ABDUR RASHID	UE	Alamdanga,Chuadanga		01712-212570
27	Tonmoy Pandit	Mid Envt. Specialist			01794670289
28	Sabbir Ahmed Dhali	Mid Social develop-ment specialist			01704559590
29	Md. Moshiar Rahman	SAE	Sarsha, Jashore		01715717600
30	Md. Afzal Rahman	Surveyor	Bagherpara,		017'680063
31	md Liaquat Ali.	SAE	Harinakundu		01718818407
32	Md EMDADUL HAQUE	SAE	XEN office Jhenaidah		01712-855335
33	Md. Abdul Basit	SAE	LGED Jenaidah		01716068124
34	Md. Ashikuzzaman	Student	Bangladesh University		01641-539647

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

Western Economic Corridor & Regional Enhancement Program

Stakeholder Consultation on Environmental and Social Management Framework and Resettlement Policy Framework

ATTENDANCE SHEET

Venue :- RTC LGED, Jessore

Date:-11-03-2020

Sl. No.	Name	Designation	Place of Posting	Signature	Mobile No.
35	MD. Jeaur Rahaman	Student	Sunergon University		01212-405632
36					01918896780
37					01992 [illegible]
38			The New Nation		01712-633504
39	Mohammad Anawer Parvez	SDE	RHD, Jessore		01730-782768
40					
41					
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