

## ENVIRONMENTAL& SOCIAL MANAGEMENT FRAMEWORK (ESMF)



## MULTI-PURPOSE DISASTER SHELTER PROJECT (MDSP)

Local Government Engineering Department (LGED)

August 2014

## **EXECUTIVE SUMMARY**

### **Introduction and Project Description**

The coastal areas and off-shore islands of Bangladesh are low lying and flat. The height above mean sea level of the coastal zone is less than 3 m. The coastal regions are subjected to damaging cyclones almost every year. The cyclone Sidr of 2007, Nurgis of 2008, Aila of 2009 and Laila of 2010 were the annual extreme events among a number of other hazards occurred in Bangladesh. . The housing sector, productive sectors and public infra-structures were affected due to the Sidr. Total damages and loss caused by the Sidr were estimated to be BDT 115.6 billion (US\$ 1.7 billion). These early estimates suggest that the reconstruction costs of the lost and damaged infrastructures are likely to be considerable. The Government of Bangladesh is preparing the Multipurpose Disaster Shelter Project (MDSP) to reduce the vulnerability of the population in cyclone prone areas of Bangladesh covering 9 coastal districts including Sidr hit Bhola, Barisal, Pirojpur and Patuakhali, and five other coastal districts including Chittagong, Cox's Bazar, Feni, Laksmipur and Noakhali. The project aims to (a) reduce the loss of life of human and livestock during natural disasters; and (b) increasing the population covered by accessible multi-purpose shelters. These objectives will be achieved by improving existing multi-purpose shelters, constructing new shelters, and improving access roads to the shelters and connectivity in the area.

The project components eligible for funding under MDSP will be required to follow the World Bank's safeguard policies, in addition to conformity with environmental and social legislation of the Government of Bangladesh (GOB). The exact locations, size and extent of the sub-projects are remain unknown and the details of the sub-projects to be implemented under MDSP will be finalized during project implementation phase and therefore, a framework approach has been adopted for Environment and Social Assessment. This document the Environmental and Social Management Framework (ESMF) of MDSP has been developed to ensure compliance with the World Bank's safeguard policies under the current conditions in Bangladesh.

### **Relevant Government and World Bank Policies**

The document is prepared as per requirement of the government of Bangladesh and World Bank of Project/Program Financing. Cyclone shelter construction is not clearly categorized in ECR. It may be noted that construction of multi-storied building is considered as the 'Orange B' category. Construction, reconstruction and extension of shelter connecting roads and local roads are also classified as 'Orange B' category. Environmental Assessment/IEE will be carried out for the new and rehabilitation of cyclone shelters and connecting roads. If IEE indicates that there are significant environmental impacts from the construction/rehabilitation of cyclone shelter and roads; the implementing agency will conduct the EIA as per DOE guidance and require DOE clearance. Site clearance will be required for all connecting roads and cyclone shelters. In view of subprojects nature, the project is classified as a Category 'B' under the WB safeguard policy. OP/BP 4.01 has been triggered to ensure that the sub project design and implementation will be focused on reducing adverse impacts and enhancing positive impacts.

The new disaster shelter cum school building will be constructed within the boundary of the selected existing education institutions. The activities of the project will not involve any pesticide application. Activities in forest areas or natural habitat or relate to protection of dams will not be supported under this project. Also it is unlikely that any designated physical cultural resources will be affected by the subprojects. Hence OP 4.09, OP 4.04, OP 4.11, OP4.36 and OP 4.37 will not trigger for this project.

The project does not envision any land acquisition or population displacement which is evident under the ongoing ECRRP. Although unlikely, the project at a later stage may like to acquire private lands and/or public land from private uses only at extreme circumstances of unavailability of land through other means. Land, in such circumstances, will be acquired under the Acquisition and Requisition of Immovable Property Ordinance, 1982 of the Government of Bangladesh. The acts therefore, trigger the Bank OP 4.12 on involuntary resettlement. The tribal peoples, although have distinct indigenous language and culture, they are mainstreamed in the society for their livelihoods, land tenancy and political institutions. No tribal people will anyway be affected by any intervention under the project. Therefore the Bank OP 4.10 is not triggered to the project. However, if such groups are identified to be affected during the detailed engineering design, LGED will select to drop the site and opt for alternative one in the same vicinity and catchment area associating no such negative impacts.

### **Environmental and Social Assessment with Consultation**

For carrying out environmental and social assessment of the MDSP, field surveys, consultations with different stake holders, Focus Group Discussions (FGDs), review of EA reports of ongoing ECRRP etc. were made. Field visits were conducted to two proposed preliminary project sites (exact location of the construction/reconstruction is yet to be identified) to be possibly considered and three completed project sites under Emergency Cyclone Rehabilitation and Restoration Project (ECRRP). Literature review focused on current policies, legislations, procedures and practices of the Government of Bangladesh (GoB) and the World Bank operational policies on environmental and social safeguards.

### ***Environment***

Each of the activity under ECRRP was environmentally assessed before construction in accordance with the environmental management framework (EMF). Baseline surveys were done at each subproject and the site specific management plan was prepared. The Upazilla Engineer or Sub-Assistant Engineer of LGED and the Field Resident Engineer of the Consultant team mainly conducted the screening work and the environmental specialist of Design and Supervision Consultants (DSM Consultant) endorsed the screening format. Most of the screening checklist revealed that the sub-projects did not generate any significant adverse impact on pre-construction, construction and post-construction phases in the physical and social environment of the area.

### ***Environmental Issues and Impact***

Major environmental concern in the context of the sub-projects of ECRRP are site specific and temporary and construction related. The issues are mainly dust, noise, waste disposal, water supply and sanitation, drainage congestion, safety measures in stockpiling and transportation of stockpiles of construction and site wastes. The cost of the environmental management plan (EMP) has been estimated and included in the bill of quantities of bid document. Frequent field visits and close

supervision by the field staff ensure the implementation of EMP. In addition, Monitoring and Evaluation (M&E) Consultant under PCMU is responsible for reviewing the EA and supervising implementation of the overall EMF.

No major environmental problem has been reported in the project implementation of the original project by far. It was notified from the M&E Consultant that some EIA reports for Cyclone Shelters had not been received before commencement of the respective construction. Further attention is required in timely preparation and review of the EA reports and the monitoring of EMP implementation.

The compliance of the environmental issues will smoothly ensure if the concerned field staffs have the technical background or training programs are arranged for them on supervision for the implementation of Environmental Management Plan (EMP).

### ***In Project Benefit***

Project benefits for multipurpose disaster shelters include (i) ensuring safe sheltering of the project beneficiaries at the event of any disasters including cyclone, (ii) provide congenial learning environment and sufficient space in the classrooms at multipurpose shelters, (iii) overall improved schooling facilities and environment to be ensured at multipurpose disaster shelters conducive to children's learning, and (iv) affected people also will be able to bring their cattle to keep at safe shelters at the event of any disasters. There is provision of Access Road and Associated Structures to the Disaster Shelters so that the shelters can be accessed safely. This will be very useful for the users particularly students to commute with comfort particularly during rainy season. Separate floor for sheltering livestock will save quite a number of cattle and other livestock. The site will be developed and enhanced through a Land Use Plan and Tree Plantation. The ancillary provisions in the shelters stemmed out from environmental considerations. These provisions can be used both during the time of emergency as well as during normal activities of the schools. These provisions include solar panel benefits for clean energy for the users. One of the most important needs during and after cyclones is the availability of drinking water. This is all the more important as surface water is often saline and in a few cases with traces of arsenic in hand pumps. To deter this, tube-wells on raised platform pumping safe water will be installed in the shelters. There will be provisions of rain water harvesting facilities in the shelters. First-Aid Boxes will be placed for each Shelter to take care of immediate requirements and there will be Separate Room for Pregnant Women during occupancy in the shelters. Provision of Store Rooms will solve storing of materials otherwise kept here and there creating environmental problems.

### ***Social Assessment***

The social assessment comprised of (i) beneficiary assessment, (ii) stakeholder analysis, and (iii) impacts assessments. Beneficiary assessment enabled building baseline socio-economic profiles at the project area; the vulnerability of the community to natural disasters and the need for disaster shelters. The disaster prone 9 districts, where the shelters are proposed to be constructed, have been taken as the project area. The social assessment identified the beneficiaries at sample locations and consulted them for understanding their expectations, issues and concerns. The social assessment also included impact assessments and risk analysis. The results have been used in designing the social management

framework addressing social development and safeguards issues, thus contributing in sustainable positive benefits from the project.

### ***Social Issues and Impacts***

Rehabilitation and construction of multipurpose shelters and shelter connecting roads will benefit communities in the 9 coastal districts focusing the 7420 rural villages. About 17 million people in 3.5 million rural households are targeted for gradual secured shelter at disaster events. Total population of the project area is 22.9 million where 11.6 million are women and 49,531 peoples belongs to tribal communities. Social issues relating to project implementation are: (i) avoiding adverse social impacts in site selection, design and construction; (ii) participation by project functionaries, civil society and local communities; (iii) inclusion, particularly of the poor and vulnerable sections including women and ethnic minorities; (iii) identification of unavoidable adverse social impacts and mitigation; (iv) social conflicts and grievances management during construction; (v) capacity building of key stakeholders; (vi) addressing gender issues and community needs; and (vii) communication to address these issues.

Construction of new shelters and horizontal extension of existing shelters will be done within the existing owned land of the sponsoring educational and social institutions. While the shelter connecting roads will be developed using the existing road reserve identified by the community. No land acquisition or population displacement is envisioned under the project. Any additional land will be obtained and any encroachment of existing lands will be removed under voluntary agreement. Lands may also be obtained through direct purchase (willing seller-buyer approach), exchange or contribution against compensation by the sponsoring institutions or the community. However, at extreme circumstances of critical needs, LGED may like to obtain land through involuntary acquisition as the last resort.

The tribal peoples in the project districts have their own indigenous language and culture but are mainstreamed in terms of livelihoods, tenancy of land and political institutions. Nonetheless, no subproject will be taken for financing under the project that may negatively affect the tribal peoples.

### **Environmental and Social Assessment Procedure**

All the sub-projects to be funded under MDSP will be subject to an environmental screening in order to prevent execution of projects with significant negative environmental impacts. Environmental screening is a part of the IEE. The purpose of the environmental screening is to get relevant concerns addressed early on before further design of a project and to ensure that actions to mitigate environmental impacts or enhance environmental opportunities are budgeted for. The major activities to be carried out for IEE/EA (including EMP) include: (i) Environment Screening (identification of possible impacts) (ii) Description of Surrounding Environment (establishment of “baseline environment” against which impacts of the proposed sub-project would be evaluated); (iii) analysis of alternatives; (iv) identification of major sub-project activities during both construction and operational phases; (v) assessment, prediction and evaluation of impacts of major project activities on the baseline environment; (vi) carrying out public consultations; (vii) preparation of environmental code of practice (ECoP); and (viii) identification of mitigation measures and preparation of impact specific environmental management plans (EMP) including monitoring requirements. The EMF presents detail guidelines for carrying out each

of these major activities. If the IEE finds significant impacts, detail environmental impact assessment will be carried out for that sub-project.

The Social Assessment Procedure has been prepared in compliance with the Bank OP 4.12 on involuntary resettlement and following the legal framework active in the country for acquisition of land. The document will guide LGED to address social safeguard compliance issues arising at project implementation stage and to ensure social inclusion in the process. LGED will assess social issues related to site selection, subproject design, methods of obtaining lands for subprojects, identify impacts of project interventions to prepare Social Management Plan (SMP) for all subproject packages, and Resettlement Action Plan (RAP), where required, following the agreed social assessment procedure. A grievance redress mechanism (GRM) will be in place at each subproject site for receiving complaints and suggestions, and settlement of subproject related grievances from the communities and affected persons.

### **Environmental Management**

A comprehensive Environmental Management Plan (EMP) which focuses on managing construction and operation phase-related impacts should suffice in managing the potential construction and operation phase impacts. Apart from the provisions under “General Specification” and “Particular Specification” for different sub-project components, the EMP includes special environmental clauses (SECs) which shall be included in the Tender Document under General/Particular Specification. These clauses are aimed at ensuring that the Contractor carries out his responsibility of implementing the EMP and other environmental and safety measures. Since many contractors do not have clear understanding the need of environmental management, some quoted very low price for implementation of EMP and eventually cannot implement EMP as per design. To avoid this problem, Fixed Budget will be assigned for EMP implementation. The contractors may need orientation on the requirement of the EMP in the pre-bidding meeting.

ICT monitoring will be used to enhance the efficiency of MDSP-II by providing a single-stop instrument to monitor progress of construction, provide visual images to assess quality, and monitor the number and frequency of visits from LGED engineers and World Bank teams tasked with supervision. ICT monitoring will provide in-depth and real-time snapshots of project performance in a resource-constrained environment, automatically place pressure points on identified problem shelters, inject transparency into the construction process, and motivate supervision teams and contractors.

### **Institutional Arrangement for Safeguard Compliance**

The existing Project Management Unit (PMU) for the development and management of the multipurpose cyclone shelters program under ECRRP is the proposed PMU of MDSP. However, it would be strengthened with an additional Deputy Project Director (DPD). The DPD would be supported by a Senior Technical Specialist, Senior Procurement Specialist, a Senior Financial Management Specialist, a Senior Environment Specialist, a Senior Social Specialist, a Communication Specialist and a GIS specialist. The Field Level Offices in each district headed by an Executive Engineer would be responsible for supporting the construction supervision and environment and social management with the help of the construction supervision consultants. The LGED will hire the services of international /national firm

through competitive selection in engineering surveys, designs, environmental assessments, and preparation of EMPs, social screening of subprojects and preparation of SMP along with RAP including data collection and construction supervision including quality assurance, preparation of bidding documents and final certification of quantity and quality compliance of works completed by the contractors. As part of the activities, the environment specialists of DS consultant will conduct the IEE and EIA (where applicable) with EMPs. The cost of the environmental mitigation measures will be estimated and included in the bill of quantities. The civil engineering contractors will be assigned for implementation of these environmental mitigation measures.

PMU with assistance from the M&E consultant will be designated to review all environmental and social screening, assessment, mitigation measures and costing. The M&E consultant will also oversee the implementation of the ESMF and the EMPs, SMP and RAP. For this purpose, M&E consultants will deploy a full time environmental specialist and a full time social specialist. PMU with help of Environment and Social Specialist will submit the overall quarterly progress report on environment compliance to the World Bank.

### **Access to Information**

The ESMF report and impact mitigation measures will be translated into Bengali language and disseminated locally. Copies of the report (both in English and Bengali) will be sent to all the concerned field offices of the LGED and will be made available to the public. The draft ESMF will also be uploaded in the website of LGED and in the Bank InfoShop before appraisal completion.

In addition a national workshop has been planned after the appraisal mission of the project to present the ESMF to the key stakeholders including field level staff of the implementing agencies (LGED), community representatives, NGOs, civil society etc. The comments and the findings from the workshop and other public will be reviewed and incorporated in the final report.

During the implementation stage of project, the subproject specific screening/assessment report will periodically be posted in the LGED website before the bidding process.

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## List of Acronyms

AP	Affected Person
ARIPO	Acquisition and Requisition of Immovable Property Ordinance
BBS	Bangladesh Bureau of Statistics
BDT	Bangladesh Taka
BECA	Bangladesh Environment Conservation Act
BNBC	Bangladesh National Building Code
BOD5	5-day Biochemical Oxygen Demand
BP	Bank Procedures
BUET	Bangladesh University of Engineering Technology
CHT	Chittagong Hill-Tracts
COD	Chemical Oxygen Demand
DG	Director General
DoE	Department of Environment
DoF	Department of Forest
DSC	Design & Supervision Consultant
EA	Environmental Assessment
ECA	Ecologically Critical Area
ECC	Environmental Clearance Certificate
ECCRP	Emergency Cyclone Recovery and Restoration Project
ECOP	Environmental Code of Practice
ECR	Environment Conservation Rules
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
EMP	Environmental Management Plan
ESA	Environmental and Social Assessment
ESA	Environmental and Social Assessment
ESMF	Environmental and Social Management Framework
ESMF	Environmental and Social Management Framework
FGD	Focus Group Discussion
GAAP	Governance and Accountability Action Plan
GOB	Government of Bangladesh
GRC	Grievances Redress Committee
GRM	Grievance Redress Mechanism
HQ	Head Quarter
IDA	International Agency,
IEE	Initial Environmental Examination
IFC	International Finance Corporation
LGED	Local Government Engineering Department
MoEF	Ministry of Environment and Forests
NGO	Non-Government Organization
O&M	Operation & Maintenance
OHS	Occupational Health and Safety
OP	Operational Policy
PAP	Project Affected Person
PD	Project Director
PM	Particulate Matter
PM10	Particulate Matter with aerodynamic diameter $\leq 10$ micrometers
PM2.5	Particulate Matter with aerodynamic diameter $\leq 2.5$ micrometers
PMU	Project Management Unit

PPE	Personal Protective Equipment
PWD	Public Works Department
RAP	Resettlement Action Plan
SA	Social Assessment
SECs	Special Environmental Clauses
SIA	Social Impact Assessment
SMP	Social Management Plan
SPM	Suspended Particulate Matter
ToR	Terms of Reference
TPP	Tribal People Plan
WB	World Bank
WBG	World Bank Group
WHO	World Health Organization

## **PART A- GENERAL**

# 1. INTRODUCTION

## 1.1. Background

1. The coastal areas and off-shore islands of Bangladesh are low lying and flat. The height above mean sea level of the coastal zone is less than 3m. The coastal regions are subjected to damaging cyclones almost every year. They generally occur in early summer (April-May) or late rainy season (October-November). Cyclones originate from the low atmospheric pressures over the Bay of Bengal. A tropical cyclone forming in the Bay of Bengal has a lifetime of one week or longer. The height of the surges can raise up to a maximum of 10 meters in the bay. The cyclone Sidr hit the southwest coastal region of Bangladesh on November 15, 2007. It affected people and their assets to varying extents in the 30 districts of Bangladesh. Among the 30 districts, 4 districts were worst affected, 9 districts were badly affected and 17 districts were moderately affected. A total of 3,347 people were reportedly killed and the number of affected people in the affected districts was 8.9 million. It was assessed that cyclone Sidr damaged crops of 300,739 hectares of agricultural lands and 1.778 million livestock were killed due to the cyclone Sidr.
2. The lengths of the fully and the partially damaged roads were 1,714 Km and 6,361 Km respectively. A total of 1,687 bridges and culverts were partially broken down. The housing sector, productive sectors and public infra-structures were affected due to the Sidr. Total damages and loss caused by the Sidr were estimated to be BDT 115.6 billion (US\$ 1.7 billion). These early estimates suggest that the reconstruction costs of the lost and damaged infrastructures are likely to be considerable.
3. LGED is currently implementing the Emergency Cyclone Recovery and Restoration Project (ECRRP) under IDA financing. One of the main components of the project has been construction and improvement of multipurpose disaster shelters in the coastal areas affected by the Cyclone Sidr in 2007 and Cyclone Aila in 2009.
4. The Government of Bangladesh is preparing the Multipurpose Disaster Shelter Project (MDSP) to reduce the vulnerability of the population in cyclone prone areas of Bangladesh covering 9 coastal districts including Sidr hit Bhola, Barisal, Pirojpur and Patuakhali, and five other coastal districts including Chittagong, Cox's Bazar, Feni, Lakshmipur and Noakhali. The project aims to (a) reduce the loss of life of human and livestock during natural disasters; and (b) increasing the population covered by accessible multi-purpose shelters. These objectives will be achieved by improving existing multi-purpose shelters, constructing new shelters, and improving access roads to the shelters and connectivity in the area.
5. The project will be implemented by the Local Government Engineering Department (LGED) under the Local Government Division (LGD) of the Ministry of Local Government, Rural Development and Cooperatives (MLGRDC). LGED has long working experience with IDA investments complying with its safeguard policies.



## **1.2. Basis of the ESMF**

6. The exact locations, size and extent of the sub-projects are remain unknown and the details of the sub-projects to be implemented under MDSP will be finalized during project implementation phase and therefore, a framework approach has been adopted for Environment and Social Assessment. An Environmental and Social Management Framework (ESMF) for the project for overall components has been adopted to ensure that all subprojects are adequately screened/assessed for the environmental issues, and to prepare site specific Environmental Management Plan (EMP) and Social Management Plan (SMP). The subproject eligible for funding under MDSP are required to satisfy the World Bank's safeguard policies, in addition to conformity with environmental and social legislation of the Government of Bangladesh (GOB). The purpose of this document is to outline a Framework for Environmental and Social Assessment and Management, giving brief details of potential Environmental and Social issues typically associated with the planning and implementation of the project activities envisaged under the MDSP.

7. The Environmental and Social Management Framework (ESMF) highlights relevant general policies, guidelines, codes of practice and procedures to be taken into consideration for integration of environmental and social aspects into the project design. Adhering to the principles and procedures and using the checklist of potential environmental and social issues laid out in this ESMF will help the implementing agencies to ensure compliance with the World Bank's safeguard policies and the relevant provisions under the related Government policies, and associated rules, regulations and procedures.

8. Sub-project specific environmental and social impacts cannot be precisely identified upfront before sites are selected and detailed site investigations are carried out. The ESMF will provide the necessary background for environmental and social considerations, a checklist of potential environmental and social issues of the project activities to be considered and built into the design of the project so that environmentally and socially sustainable implementation can take place. It will provide guidelines to carry out Initial Environmental Examinations (IEE), Environmental Impact Assessment (EIA), and to prepare Environmental Management Plans (EMP), Social Impact Assessment, Resettlement Action Plan (RAP) and Social Management Plan(SMP) to mitigate project induced negative environmental impacts and enhance positive environmental impacts of the project interventions.

9. This EMF will also serve as the guideline for preparing Terms of Reference (TOR) of the environment safeguard staff designated by the implementing agency, LGED to oversee and monitor the environmental compliance of the respective project components coming under their implementation responsibility. Therefore the EMF must be used as the template and guideline to ensure diligent environmental compliance of the planning and implementation of the activities envisaged under the MDSP projects.

10. The project components eligible for funding under MDSP will be required to follow the World Bank's safeguard policies, in addition to conformity with environmental and social legislation of the Government of Bangladesh (GOB). The ESMF of MDSP has been developed to ensure compliance with the World Bank's safeguard policies under the current conditions in Bangladesh.

### **1.3. Objectives and General Principles of the ESMF=EMF+SMF**

#### **1.3.2. Environment Management Framework (EMF)**

11. The objective of the EMF is to ensure that activities under the proposed operations will address the following issues:

- Minimize potential negative environmental impacts as a result of either individual sub-projects or their cumulative effects;
- Enhance positive environmental outcomes;
- Provide a mechanism for consultation and disclosure of information;
- Ensure that environmental and related social issues are thoroughly evaluated and necessary interventions are incorporated in planning, decision making, and implementation of project activities;
- Protect environmentally sensitive areas from additional disturbance from project interventions;
- Protect human health and safety; and
- Ensure compliance and due diligence with World Bank environmental safeguard policies as well as with related Government policies, regulation, guidelines and procedures as applicable to the type of project activities financed by the project.

12. In view of the EMF objectives, the planning and implementation of the project activities will be based on the principles incorporated in the project design and the implementation arrangements. The work scope of MDSP involves construction of new shelters, expansion of existing shelters and connecting roads. Geographical information system (GIS) technology will be applied at the planning stage to select the locations of cyclone shelters that would be undertaken by the project. The selection will consider some factors such as habitation, communication facilities, distance from the nearest cyclone center etc. In addition, due diligence will be exercised in the selection of new shelters and expansion of old shelters to ensure that project interventions would not result in drainage congestion and barriers to natural water flows and fish migration.

13. The project will ensure that environmental considerations are given sufficient attention into design decisions of cyclone shelters. To this end, the implementing agency will carry out environmental assessment for all new cyclone shelters, rehabilitation of existing cyclone shelter and connecting roads.

14. The project will ensure that environmental assessment addresses all potential environmental direct and indirect impacts of the sub-project throughout its life: preconstruction, construction and operation stages and mitigation measures have been taken to mitigate negative consequences and enhance positive impacts.

15. To the extent possible, the project will support saline and arsenic free potable water, renewable energy (solar lighting) for lighting purposes and rainwater harvesting storage tanks for water supply purpose and proper sanitation facilities.

16. The implementing agency, Local Government Engineering Division(LGED) will follow the related government rules (laws, ordinances, acts etc.) and World Bank Operational Policies and Guidelines. The Project Director of the MDSP will be responsible for the environmental compliance in their respective

component and will be responsible for monitoring and oversight to ensure overall project environmental compliance. This EMF would serve as the basis for ensuring this compliance.

17. LGED will ensure the participation of local community in planning and implementation of sub-projects. LGED will be responsible for obtaining and ensuring clearance required from local government bodies/local committees as necessary.

18. No project activities will be carried out in disputed lands or lands restricted for development. The project will ensure biodiversity conservation and bio-safety in planning and implementing its activities.

### **1.3.3. Social Management Framework (SMF)**

19. The Social Management Framework (SMF) is designed as a guidance to LGED in mainstreaming social development and safeguards compliance requirements as per relevant national legislatives and the World Bank operational guidelines providing general policies, principles and procedures in site selection, design and implementation of subprojects (new multipurpose shelters, improvement of the existing shelters and shelter connecting roads). Specific objectives of the SMF are the following:

- Enhance the social development outcomes of construction and improvement of shelters and shelter connecting roads at strategic locations in the disaster prone coastal areas.
- Avoid or minimize land acquisition and displacement related hardships and impoverishment of the project affected persons (PAP) to the extent possible.
- Identify and mitigate adverse impacts that the selected sites might cause on people (men & women), including protection against loss of livelihood activities, with culturally, socially and economically appropriate measures.
- Develop necessary social development and safeguard compliance measures through adequate disclosure and consultation with affected people and their community, and
- Ensure compliance with the relevant GOB policies and those of the World Bank on social safeguards and other social issues, including those with gender implications.

20. To achieve the objectives, social management plan (SMP) will be prepared for each subproject or construction package following the principles, guidelines and procedures outlined in this SMF and implemented before construction of civil works. The SMPs may include resettlement action plan (RAP) where private lands or public land from private uses are taken for sites and people are displaced involuntarily.

21. In consideration of the potential adverse impacts associated with land acquisition and displacement of authorized and unauthorized private activities from the lands owned by the sponsoring institutions (and other public lands), LGED will select, design and implement all activities in accordance with the following principles:

- (1) Prior to selection of specific site, LGED will undertake community and stakeholders consultations about the objectives, scopes, and social safeguard implications of subprojects,

especially with respect to obtaining private/public lands and displacement of people from their housing, businesses, and productive resources. Consultations will inter alia include,

- All formal/informal local entities, such as beneficiary communities, local elected representatives, local women's groups and others with direct and indirect stakes in the project who are deemed key actors to influence project design and implementation.
- The persons, such as landowners, business owners, traders, embankment settlers (squatters and encroachers on sites) and the like, who would be directly affected by the project.
- The persons who would be affected in terms of loss of livelihood and/or loss of access to common property resources.

(2) LGED will avoid private land acquisition and limit its activities, to the extent feasible, within the existing land of sponsoring institutions for shelters and existing road reserve for shelter connecting roads to minimize displacement of economic and other activities from private and public lands.

(3) At extreme requirements of additional land for shelters and shelter connecting roads, LGED will seek to obtain the land through participatory approach of voluntary donation, direct purchase, exchange or contribution against compensation complying with requirements of the World Bank on such acts.

(4) At the circumstances when lands cannot be obtained through participatory approach in absolute cases of requirement, and involuntary acquisition of private lands and resume of existing lands from private uses are required, the project will resettle and rehabilitate the affected persons through compensation and other measures following the World Bank OP 4.12 on involuntary resettlement.

(5) LGED will avoid, to the extent feasible, project activities that will threaten the cultural way of life of tribal peoples; severely restrict their access to common property resources and livelihood activities; and affect places/objects of cultural and religious significance (places of worship, ancestral burial grounds, etc.).

(6) LGED will undertake social screening of all sites to identify potential social safeguard issues, and adopt and implement impact mitigation measures consistent with the Bank's OP 4.12 and OP 4.10.

(7) Special attention will be given to female affected persons in the resettlement process, where applicable and to the vulnerability of women and children in the project areas to social exclusion, trafficking, and risks of HIV/AIDS infection following the policy guidelines of the World Bank on gender.

#### **1.4. Overall Structure of ESMF**

22. This report has been prepared by Local Government Engineering Division (LGED). The report has been divided into four parts. The overall structure of the ESMF will constitute of the following chapters:

**Part A** is termed as “General” which discusses the legislative, regulatory, and institutional setup that exists in the Country, as well as the World Bank’s safeguard policies relevant to the environmental and social assessment and project description. The section also Background, Basis of ESMF, Objectives and General Principles, Overall Structure of EMF in chapter 1 and description of project components and project area in chapter 2.

**Part B** Environmental and Social Assessment include the environmental and social assessment of the ongoing ECRRP project and the proposed project, impact and mitigation and lessons learnt in chapter 4 and 5. Chapter 6 presents the consultation summary during the assessment.

**Part C** Environmental and Social Assessment Procedure includes the guidelines for conducting Environmental Screening, Analysis of Alternatives (technology, cost, site), Need for Further Assessment, Guidelines for Carrying out IEE and EIA, Project Influence Area, Environmental Baseline, Identification of Major Sub-project Activities. Assessment with Prediction of Impacts, consultation procedure, social screening and impact identification.

Guidelines for Environmental and Social Management planning are presented in **Part D**. This section also includes institutional assessment and disclosure requirement. The environmental consideration to be incorporated in the design is also discussed in this section.

## 2. PROJECT DESCRIPTION

### 2.1. Project Types and Categories

23. **Project Objective.** The proposed development objective of this project is to reduce the vulnerability of the coastal population in Bangladesh to natural disasters. More specifically, the project aims to (a) reduce the loss of life and livestock during natural disasters; and (b) increasing the population covered by accessible multi-purpose shelters. This objective will be achieved by improving existing multi-purpose shelters, constructing new disaster shelters, and improving roads and connectivity in the area.

24. **Project Scope and Approach.** Over the long term, the Government of Bangladesh aims to build the resilience of coastal population to cyclones and extreme weather events. In this regard, the LGED has developed a plan to estimate the total needs of cyclone shelters in the coastal area, and to divide this need into Priority 1 and Priority 2 designations. The objective of the MDSP will address the critical need of Priority 1 shelters in the coastal area. MDSP will cover nine districts severely affected by cyclones, while ECRRP focus was primarily on Sidr affected districts. The Multipurpose Disaster Shelter Project (MDSP) will cover 9 coastal districts including 4 Sidr hit Bhola, Barisal, Pirojpur and Patuakhali, and five other coastal districts including Chittagong, Cox's Bazar, Feni, Laksmipur and Noakhali (Map 1).

25. **Project components.** The proposed project is divided into three components. The proposed components are: .

Component A: Reconstruction and Improvement of Multipurpose Shelters.

Component B: Project Management, Monitoring and Technical Assistance and Training

Component C: Emergency Contingent Response Component.

26. **Component A** is the physical interventions of the MDSP constitute construction, reconstruction and improvement of multipurpose shelters in the coastal area of Bangladesh with the following categories.

- **Subcomponent A1: Construction of 550 new shelters.** This sub-component will finance the construction of 550 new shelters within the Priority 1 category. Shelter designs will include separate toilet facilities for men and women, and to include a safe space for livestock. The construction of shelters will be carried out by LGED as multipurpose buildings for primary schools, community centers or other community buildings, in full coordination with the local government, the local communities and the educational institutions.
- **Subcomponent A2: Rehabilitation of 450 existing shelters.** This subcomponent will finance repairs and improvement of 450 existing educational institutions cum shelters that are damaged or cannot be used as shelters due to inadequacies. These shelters will be rehabilitated to bring these back into use, and to update and modernize the facilities. The shelters will be upgraded by LGED in coordination with other concerned agencies and packaged into larger contracts so as to expedite the works.
- **Subcomponent A3: Improvement of 550 km of communication network to shelters.** Around 550 kilometers of rural road networks as well as communication networks to the shelters constructed under the project to make them more accessible



## **2.2. Project Activities**

27. The shelter buildings will be constructed in fashion so that they can be used for continuing class works and other activities in normal situations. The shelters are constructed with separate bathrooms for men and women. Safe water supply is ensured, water treatment for wastewater is included and solar panels are provided. In addition, connections to existing road are ensured by constructing a link, if needed. One floor is constructed for livestock and animals and top floor for human shelter. Ramp has been provided for disable people and easy movement of livestock. The shelters are designed to withstand wind speeds of 260 km/hour and placed higher than the expected surge level.

28. Project activities are mostly labour intensive and it is expected that income level of the local poor will rise due of implementation of the project as they will get additional employment. The Project will engage landless destitute women as far as possible in the maintenance and tree plantation activities and this will generate long-term employment opportunity for them.

29. Efforts and activities will be undertaken to enhance the capability and experience of the officials of the LGED working at District and Upazila level through training. Union Parishad (UP) and local people will be involved in the preparation and implementation of the project activities. As a result implementation capability and experience of the UP and local people will increase and it will also create sense of ownership of the infrastructure development under the project by the Union Parishad and the local People.

30. The project will ensure public participation by involving them in the selection process of the shelter, solicit their wisdom and views and incorporate their views in the design of the shelter. Efforts will be made to ensure the participation and responsibility of the institutions' Management Committee in the quality control, and monitoring environmental and social aspects during implementation and maintenance for sustainability of the interventions.

31. LGED intends to ensure that the proposed infrastructure under the project takes into account the environmental concerns in accordance with the Environment Conservation Rules 1997, and the World Bank Safeguard Policies. In conducting this work, the Design Supervision (DS) Consultants shall cooperate fully with Government officials related to the project who will provide the data and requirements; the DS Consultants shall be solely responsible, however, for the analysis and interpretation of all data received and for the conclusions and recommendations contained in their reports.

## **2.3. MDSP Project Area**

32. Multipurpose Disaster Shelter Project (MDSP) covers 9 coastal districts namely Barisal, Bhola, Patuakhali and Pirojpur under Barisal division and Chittagong, Cox's Bazar, Feni, Lakshmipur and Noakhali in districts under Chittagong division. These districts are in the high risks of cyclonic events and have comprehensive early warning systems. Rehabilitation and construction efforts under the Emergency 2007 Cyclone Recovery and Restoration Project (ECRRP) were concentrated in the Sidr-affected area<sup>1</sup> only and a total of 232 disaster shelters were rehabilitated and 148 new shelters

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<sup>1</sup>Bagerhat, Barguna, Barisal, Bhola, Jhalokai, Khulna, Patuakhali, Pirojpur, Sathkira



constructed. MDSP will attempt to meet at least two thirds of the required shelters for nine coastal districts as per the estimated 1046 new shelters for Priority 1 investments by 2020. Where ECRRP has completed the construction or rehabilitation of multipurpose disaster shelters, investments under MDSP would focus only on the additional shelters. MDSP will also cover the coastal districts where no construction and rehabilitation works were undertaken under ECRRP. A total of 450 existing shelters in Bhola, Chittagong, Cox's Bazar, Feni, Lakshmipur and Noakhali will be rehabilitated and 550 new shelters will be constructed in all the 9 coastal districts under MDSP. MDSP will also cover construction and improvement of 550 km shelter connecting roads in these districts. MDSP areas comprise of 74 Upazilas under the 9 coastal districts vulnerable to various natural disasters including cyclone, storms, flooding, etc. Out of 74 Upazilas, 42 Upazilas are located in the 5 districts under Chittagong division and 32 Upazilas are located in the 4 districts under Barisal division. There are 7420 villages in 734 Unions of the 74 Upazilas (Table 2-1). Total area of the project districts constitutes 24578.5 km<sup>2</sup> which is 16.7% of the total area of Bangladesh (147,570 km<sup>2</sup>).

**Table 2-1: MDSP Project Area**

Division	District	Area (sqkm)	Rehabilitation of existing shelters (no.)	Construction of new shelters(no.)	No. of Upazila /Thana	No. of Pourashava	No. of Union	No. of Mouza	No. of Village
Barisal	Barisal	2790.51	0	58	10	5	85	1,001	1,116
	Bhola	3737.21	60	137	7	5	68	314	438
	Patuakhali	3220.15	0	36	8	5	71	561	878
	Pirojpur	1307.61	0	50	7	3	51	390	648
	<b>Sub-total</b>	<b>11055.48</b>	<b>60</b>	<b>281</b>	<b>32</b>	<b>18</b>	<b>275</b>	<b>2266</b>	<b>3080</b>
Chittagong	Chittagong	5282.98	130	120	14	10	199	909	1284
	Cox's Bazar	2,491.86	120	61	8	4	71	177	989
	Feni	982.34	20	19	6	5	43	497	553
	Lakshmipur	1,455.96	30	34	5	4	55	455	547
	Noakhali	3,600.99	90	35	9	8	91	882	967
	<b>Sub-total</b>	<b>13,814.13</b>	<b>390</b>	<b>269</b>	<b>42</b>	<b>31</b>	<b>459</b>	<b>2920</b>	<b>4340</b>
<b>Total</b>		<b>24,869.61</b>	<b>450</b>	<b>550</b>	<b>74</b>	<b>49</b>	<b>734</b>	<b>5186</b>	<b>7420</b>

Source: BBS, Census-2011

## 2.4. Disaster vulnerability

33. Bangladesh is a disaster-prone country that is affected almost every year by natural disasters of some kind. Its geographical location and three mighty rivers, the Ganges, the Brahmaputra and the Meghna rivers converged on its territory cause frequent floods, erosions and cyclones. Over a period of 100 years, 508 cyclones of varied degrees of devastations affected the Bay of Bengal region. A devastated cyclone occurs once every three years<sup>2</sup>. Table 2-2 shows the death which took place since 1584.

<sup>2</sup> Ali A., Climate change impacts and adaptation assessment in Bangladesh, Climate Research, Vol. 12, 1999

**Table 2-2: Years of cyclones hit Bangladesh and death toll**

Year	Deaths	Year	Deaths	Year	Deaths
1584	200,000	1941	7,500	1970	500,000
1822	40,000	1960	5,149	1985	11,069
1876	100,000	1961	11,468	1988	5,708
1897	175,000	1963	11,520	1991	138,000
1912	40,000	1965	19,279	-	-
1919	40,000	1965	12,000	-	-

34. It is evident that Barisal, Bhola, Patuakhali, Pirojpur, Chittagong, Cox's Bazar, Lakshmipur, Feni and Noakhali districts of Bangladesh has been vulnerable to various disasters. The coastal districts have been more vulnerable to the above-mentioned disasters. These hazards are already leading to the loss and destruction of housing, land and property, the loss of livelihoods and displacement of the affected people to some extent in the coastal districts. The poor people encounter the hardest hit of these disasters. The effects of climate change may exacerbate magnitude of devastation of the disasters over the upcoming years. Many of these hazards will disproportionately affect the poorest and most vulnerable people in Bangladesh. The cyclone Sidr of 2007, Nurgis of 2008, Aila of 2009 and Laila of 2010 were the annual extreme events among a number of other hazards occurred in Bangladesh.

35. Barisal, Khulna and Dhaka divisions were severely affected by the Sidr. Of the 12 worst affected districts, 6 districts are in Barisal division, 3 in Khulna division and 3 in Dhaka division. The worst affected districts located in Barisal division include Barisal, Pirojpur, Jhalokathi, Patuakhali, Barguna and Bhola districts. The worst affected districts located in Khulna division include Bagerhat, Khulna and Satkhira districts. The worst affected districts located in Dhaka division include Gopalganj, Madaripur and Shariatpur districts. Table 2-3 shows cyclone Sidr death toll, number of missing people and number of injured people in Barisal, Chittagong, Dhaka, Khulna and Sylhet divisions. The highest numbers of the death, the missing and the injured persons were 2,378; 902 and 42,238 persons respectively in Barisal division while the lowest number of deaths (2 persons) was occurred in Sylhet division.

**Table 2-3: Number of death, missing and injured people due to the Sidr**

Name of Division	No. of Deaths	No. of Missing People	No. of Injured People
Barisal	2,378	902	42,238
Chittagong	36	93	36
Dhaka	139	3	1,396
Khulna	851	3	11,612
Sylhet	2	-	-
Total	3,406	1,001	55,282

Source: MoFDM 2008.

36. The Bangladesh Meteorological Department (BMD) issued cyclone warnings in the days before Sidr's landfall at the coastal line in Bangladesh. Warnings were sent to communities regularly. Bangladesh had to endure the entire attack of Sidr in November 2007. The southeast coastal districts of Bangladesh and Myanmar were hit by Nargis. However, the southwest coastal districts of Bangladesh and some parts of India were hit by Aila and Laila. It was found that cyclones left behind the highest risk for perpetual tidal floods in the cyclone hit coastal districts of Bangladesh.

## 2.5. Type of Shelters and their Characteristics

37. Five types of shelters were designed for implementation under ECRRP which will be also used for MDSP. The plans are attached in Annex 4. The selection of the type to be built is made based on the site condition, land availability, and stake holders consultations. Table 2-4 provides an overview of the shelter types developed under the ECRRP and layout plans are attached. These types of shelters design would also be used under MDSP, however, designs would be regularly updated based on the experience gained during the project and modified to suit the needs of local communities.

**Table 2-4: Types and Options for Multipurpose Cyclone Shelters developed under ECRRP**

Key Features//Option Type	TYPE 1	TYPE 2	TYPE 3	TYPE 4 1/	TYPE 5
Floor Area (m2)	300.5	342.91	290.57	396.37	301.21
Number of Floors	2	2	3	2	2
Number of Classrooms	3	3	3	5	3
Teachers Rooms	1	1	1	1	1
First-Aid Room	1	1	1	1	1
Room for Pregnant Women	1	1	1	1	1
Store Room	1	1	1	1	1
Toilet (male)	2	2	2	2	2
Toilet (female)	2	2	2	2	2
Tube well	2	2	2	2	2
Rainwater collection tank	2	2	2	2	2
Water filter	Yes	Yes	Yes	Yes	Yes
Solar panel	Yes	Yes	Yes	Yes	Yes
Water pump	Yes	Yes	Yes	Yes	Yes
Capacity (persons)	1,300	1,500	1,300 2/	1,750	1,300
Capacity (livestock)	-	-	200	-	-

1/ Option 4 is the least or not used option as (a) the plinth size and U shaped structure requires significant land; and (b) in the event of a cyclone, the free flow of high-speed winds is restricted due to the U-shaped structure, possibly placing additional wind pressure on the structure.

2/ In reality over 4,000 people use these shelters and there is overcrowding. They use the space in hallways and stairs also.

38. The shelter buildings at existing educational and social institutions are constructed to be multipurpose, and are typically used as primary schools when they are not in use for a disaster. The shelters are constructed with separate bathrooms for men and women. Safe water supply is ensured,

water treatment for wastewater is included and solar panels are provided. In addition, connections to existing roads are ensured by constructing a link, if needed. The class rooms are provided with furniture and other teaching tools. Generally, one floor is constructed for livestock and animals and top floor for human shelter. Floors have a mosaic finish and bathrooms have tiles for easy maintenance and cleaning. The shelters are designed to withstand wind speeds of 260 km/hour and placed higher than the expected surge levels. The foundation is constructed to bear vertical additions in the future, if necessary.

39. Type 3 is used more and liked most by local communities, as it also accommodates livestock on the first floor. Types 2 & 4 require a larger footprint, and necessitate a separate “killa” space for animals, so it has been constructed in far fewer instances. Where shelter for animals is a consideration, Type 3 is constructed the most often. The design of the shelter is customized for each site making it suitable for each site and acceptable for local communities. This is a dynamic process and new designs are developed as new shelters are built.

### 3. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

#### 3.1. Relevant Government Policies, Acts, Rules and Strategies

40. The importance of environmental consideration related to construction as well as rehabilitation projects has been recognized in a number of national documents that set the legal and regulatory framework for management of the environment of various sector projects. In addition, Guidelines for Environmental Assessment of Water Management prepared by the Water Resources Planning Organization (WARPO) under National Water Management Plan Project is a useful reference document. This EMF has adopted the guidelines. The major related policies are:

##### ***National Environmental Policy 1992***

41. The concept of environmental protection through national efforts was first recognized and declared in Bangladesh with the adoption of the Environment Policy, 1992 and the Environment Action Plan, 1992. The major objectives of Environmental policy are to i) maintain ecological balance and overall development through protection and improvement of the environment; ii) protect country against natural disaster; iii) identify and regulate activities, which pollute and degrade the environment; iv) ensure environmentally sound development in all sectors; v) ensure sustainable, long term and environmentally sound base of natural resources; and vi) actively remain associate with all international environmental initiatives to the maximum possible extent.

##### ***Bangladesh Environmental Conservation Act (ECA), 1995 amended 2002***

42. This umbrella Act includes laws for conservation of the environment, improvement of environmental standards, and control and mitigation of environmental pollution. It is currently the main legislative framework document relating to environmental protection in Bangladesh, which repealed the earlier Environment Pollution Control ordinance of 1977.

43. The main provisions of the Act can be summarized as:

- Declaration of ecologically critical areas, and restrictions on the operations and processes, which can be carried or cannot be initiated in the ecologically critical area;
- Regulation in respect of vehicles emitting smoke harmful for the environment.
- Environmental Clearance;
- Regulation of industries and other development activities with regards to discharge permits;
- Promulgation of standards for quality of air, water, noises and soils for different areas for different purposes;
- Promulgation of standard limits for discharging and emitting waste; and
- Formulation and declaration of environmental guidelines;

44. The first sets of rules to implement the provisions of the Act were promulgated in 1997 (see below: “Environmental Conservation Rules 1997”). The Department of Environment (DoE) implements the Act. DoE is headed by a Director General (DG). The DG has complete control over the DoE and the main power of DG, as given in the Act, may be outlined as follows:

- Identification of different types and causes of environmental degradation and pollution;

- Instigating investigation and research regarding environmental conservation, development and pollution.
- Power to close down the activities considered harmful to human life or the environment.
- Power to declare an area affected by pollution as an Ecologically Critical Area. Under the Act, operators of industries/projects must inform the Director General of any pollution incident. In the event of an accidental pollution, the Director General may take control of an operation and the respective operator is bound to help. The operator is responsible for the costs incurred and possible payments for compensation.

### ***Environment Conservation Rules (ECR) 1997 amended 2003***

45. These are the first set of rules, promulgated under the Environment Conservation Act 1995. Among other things, these rules set (i) the National Environmental Quality Standards for ambient air, various types of water, industrial effluent, emission, noise, vehicular exhaust etc., (ii) requirement for and procedures to obtain Environmental Clearance, and (iii) requirements for IEE/EIA according to categories of industrial and other development interventions.

46. However, the rules provide the Director General a discretionary authority to grant 'Environmental Clearance' to an applicant, exempting the requirement of site/location clearance, provided the DG considers it to be appropriate.

47. Presently, "EIA Guidelines for Industries" published by the Department of Environment and the "Environment Conservation Rules 1997" are the formal documents providing guidance for conducting Environmental Assessment. Any proponent planning to set up or operate an industrial project is required to obtain an "Environmental Clearance Certificate" from the Department of Environment (DoE), under the Environment Conservation Act 1995 amended in 2002.

48. Rule 7 of Environment Conservation Rules (ECR) has classified the projects into following four categories based on their site conditions and the impacts on the environment; (a) Green, (b) Orange A, (c) Orange B and (d) Red. Various industries and projects falling under each category have been listed in schedule 1 of ECR 1997. According to the Rules, Environmental Clearance Certificate is issued to all existing and proposed industrial units and projects, falling in the Green Category without undergoing EIA. However, for category Orange A and B and for Red projects, require location clearance certificate and followed by issuing of Environmental Clearance upon the satisfactory submission of the required documents. Green listed industries are considered relatively pollution-free, and therefore do not require site clearance from the DoE. On the other hand, Red listed industries are those that can cause 'significant adverse' environmental impacts and are, therefore, required to submit an EIA report. These industrial projects may obtain an initial Site Clearance on the basis of an IEE based on the DoE's prescribed format, and subsequently submit an EIA report for obtaining Environmental Clearance.

### ***National Land-use Policy, 2001***

49. The Government of Bangladesh has adopted national Land use Policy, 2001. The salient features of the policy objectives relevant to the proposed are as follows:

- To prevent the current tendency of gradual and consistent decrease of cultivable land for the production of food to meet the demand of expanding population;
- To ensure that land use is in harmony with natural environment;

- To use land resources in the best possible way and to play supplementary role in controlling the consistent increase in the number of land less people towards the elimination of poverty and the increase of employment;
- To protect natural forest areas, prevent river erosion and destruction of hills;
- To prevent land pollution; and
- To ensure the minimal use of land for construction of both government and nongovernment buildings.

### ***Environment Court Act, 2000***

50. The aim and objective of the Act is to materialize the Environmental Conservation Act, 1995 through judicial activities. This Act established Environmental Courts (one or more in every division), set the jurisdiction of the courts, and outlined the procedure of activities and power of the courts, right of entry for judicial inspection and for appeal as well as the constitution of Appeal Court.

### ***Bangladesh Labor Act, 2006***

51. This Act pertains to the occupational rights and safety of factory workers and the provision of a comfortable work environment and reasonable working conditions. In the chapter VI of this law safety precaution regarding explosive or inflammable dust/ gas, protection of eyes, protection against fire, works with cranes and other lifting machinery, lifting of excessive weights are described. And in the Chapter VIII provision safety measure like as appliances of first aid, maintenance of safety record book, rooms for children, housing facilities, medical care, group insurance etc. are illustrated.

### ***Public Procurement Rule (PPR), 2008***

52. This is the public procurement rules of Bangladesh and this rule shall apply to the Procurement of Goods, Works or Services by any government, semi-government or any statutory body established under any law. The rule includes the adequate measure regarding the ‘Safety, Security and Protection of the Environment’ in the construction works. This clause includes mainly, the contractor shall take all reasonable steps to (i) safeguard the health and safety of all workers working on the Site and other persons entitled to be on it, and to keep the Site in an orderly state and (ii) protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of the Contractors methods of operation.

### ***Bangladesh National Building Code***

53. The basic purpose of this code is to establish minimum standards for design, construction, quality of materials, use and occupancy, location and maintenance of all buildings within Bangladesh in order to safeguard, within achievable limits, life, limb, health, property and public welfare. The installation and use of certain equipment, services and appurtenances related, connected or attached to such buildings are also regulated herein to achieve the same purpose.

54. Part-7, Chapter-3 of the Code has clarified 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.

55. Section 1.4.1 of chapter-1, part-7 of the BNBC, states 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 etc. 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”.

56. Part-7, Chapter -1 of 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).

57. To prevent workers falling from heights, the Code in section 3.7.1 to 3.7.6 of chapter 3 of part 7 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 precautions shall also be taken near the open edges of the floors and the roofs”.

### ***Coastal Zone Policy, 2005***

58. Coastal zone policy initiated as a harmonized policy that transcends beyond sector perspectives. The policy provides general guidance so that the coastal people can pursue their livelihoods under secured conditions in a sustainable manner without impairing the integrity of the natural environment. The policy framework underscores sustainable management of natural resources like inland fisheries and shrimp, marine fisheries, mangrove and other forests, land, livestock, salt, minerals, sources of renewable energy like tide, wind and solar energy. It also emphasis on conservation and enhancement of critical ecosystem necessary measures will be taken to conserve and develop aquatic and terrestrial including all the ecosystems of importance identified by the *Bangladesh National Conservation Strategy* (Mangrove, coral reef, tidal wetland, sea grass bed, barrier island, estuary, closed water body, etc.).



### ***Coastal Development Strategy, 2006***

59. Coastal Development Strategy has been approved by the Inter-Ministerial Steering Committee on Integrated Coastal Zone Management Policy (ICZMP) on February 13, 2006. The strategy is based on the Coastal Zone Policy and takes into account the emerging trends: increasing urbanization, changing pattern of land use, declining land and water resources, unemployment and visible climate change impacts. The strategy has 9 strategic priorities and the following 3 are relevant priorities with proposed type of interventions:

- *Safety from man-made and natural hazards:* i) strengthening and rehabilitation of sea dykes and ii) reduction of severe vulnerability in the coastal zone through multi-purpose shelters including coping mechanism.
- *Sustainable management of natural resources:* i) environmentally and socially responsive shrimp farming; ii) introduction of renewable energy in coastal areas; and iii) development of marine fisheries and livelihood.
- *Environmental conservation* -i) Marine and coastal environmental development; and ii) strengthening of Coast Guard for improvement of coastal safety and security in coordination with other law enforcing agencies.

### ***Standing Orders on Disaster, 1999***

60. The 'Standing Orders on Disaster' is designed to enhance capacity at all tiers of government administrative and social structures for coping with and recovering from disasters. The document contains guidelines for construction, management, maintenance and use of cyclone shelter center. According to the guideline, geographical information system (GIS) technology will be applied at the planning stage to select the location of cyclone shelter considering habitation, communication facilities, distance from the nearest cyclone center etc.

61. The advice of the concerned District Committee is to be obtained before final decision. The cyclone shelters should have easier communication facilities, so that in times of disaster, people can go to the shelters without any delay. For this reason, the road communication from the cyclone shelters should not only link up with city or main road but also with neighbouring village areas. Provision of emergency water, food and sanitation and shelter space for livestock should also be kept in view for construction of shelters.

### ***GOB Laws on Land Acquisition***

62. The principle legal instrument governing land acquisition in Bangladesh is the Acquisition and Requisition of Immovable Property Ordinance, 1982 (Ordinance II of 1982 with amendments up to 1994) and other land laws and administrative manuals relevant to land administration in Bangladesh. According to the 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. The 1982 Ordinance requires that compensation be paid for (i) land and assets permanently acquired (including standing crops, trees, houses); and (ii) any other damages caused by such acquisition. The Deputy Commissioner (DC) determines (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) 50% premium on the assessed value (other than crops) due to compulsory acquisition. The 1994 amendment made provisions for payment of crop compensation to tenant cultivators. 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.

### **3.2. World Bank Environmental and Social Safeguard Policies**

63. The objective of these policies is to prevent and mitigate undue harm to people and their environment in the development process. Safeguard policies provide a platform for the participation of stakeholders in project design, and act as an important instrument for building ownership among local populations. The effectiveness and development impact of projects and programs supported by the Bank has substantially increased as a result of attention to these policies. The World Bank has ten environmental, social, and legal safeguard policies which are listed in the following:

#### **Environmental policies:**

- OP/BP 4.01 Environmental Assessment
- OP/BP 4.04 Natural Habitats
- OP/BP 4.09 Pest Management
- OP/BP 4.11 Physical Cultural Resources
- OP/BP 4.36 Forests
- OP/BP 4.37 Safety of Dams

#### **Social Policies**

- OP/BP 4.10 Indigenous Peoples
- OP/BP 4.12 Involuntary Resettlement

#### **Legal Policies**

- OP/BP 7.50 International Waterways
- OP/BP 7.60 Disputed Areas

64. Operational Policies (OP) are the statement of policy objectives and operational principles including the roles and obligations of the Borrower and the Bank, whereas Bank Procedures (BP) is the mandatory procedures to be followed by the Borrower and the Bank. Apart from these, the IFC guidelines for Environmental Health and safety have been adopted by the World Bank Group which is also relevant for environmental protection and monitoring. In addition to that the Policy on Access to Information of World Bank also relates to environmental safeguard. The environmental safeguard and access to information policy as well as the IFC guidelines are discussed below:

#### ***OP/BP 4.01 Environmental Assessment***

65. This policy is considered to be the umbrella safeguard policy to identify, avoid, and mitigate the potential negative environmental and social impacts associated with Bank lending operations. In World Bank operations, the purpose of Environmental Assessment is to improve decision making, to ensure that project options under consideration are sound and sustainable, and that potentially affected people have been properly consulted. The borrower is responsible for carrying out the EA and the Bank advises

the borrower on the Bank's EA requirements. The Bank classifies the proposed project into three major categories, depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts:

Category A: The proposed project is likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works.

Category B: The proposed project's potential adverse environmental impacts on human population or environmentally important areas-including wetlands, forests, grasslands, or other natural habitats- are less adverse than those of Category A projects. These impacts are site specific; few if any of them are irreversible; and in most cases mitigation measures can be designed more readily than Category A projects.

Category C: The proposed project is likely to have minimal or no adverse environmental impacts.

#### ***OP/BP 4.04 Natural Habitats***

66. The conservation of natural habitats is essential for long-term sustainable development. The Bank therefore supports the protection, maintenance, and rehabilitation of natural habitats and their functions in its economic and sector work, project financing, and policy dialogue. The Bank supports, and expects borrowers to apply, a precautionary approach to natural resource management to ensure opportunities for environmentally sustainable development. The Bank does not support projects that involve the significant conversion or degradation of critical natural habitats.

#### ***OP/BP 4.09 Pest Management***

67. The aim of the pest management policy is to minimize and manage the environmental and health risks associated with pesticide use and promote and support safe, effective and environmentally sound pest management. The procurement of any pesticide in a Bank-financed project is contingent on an assessment of the nature and degree of associated risks, taking into account the proposed use and the intended user. To manage pests that affect either agriculture or public health, the Bank supports a strategy that promotes the use of biological or environmental control methods and reduces reliance on synthetic chemical pesticides. In Bank- financed projects, the borrower addresses pest management issues in the context of the project's environmental assessment. In appraising a project that will involve pest management, the Bank assesses the capacity of the country's regulatory framework and institutions to promote and support safe, effective, and environmentally sound pest management.

#### ***OP/BP 4.11 Physical Cultural Resources***

68. Physical cultural resources are defined as movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Their cultural interest may be at the local, provincial or national level, or within the international community. Physical cultural resources are important as sources of valuable scientific and historical information, as assets for economic and social development, and as integral parts of a people's cultural identity and practices. The Bank assists countries to avoid or mitigate adverse impacts on physical cultural resources from development projects that it finances. The impacts on physical cultural resources resulting from project

activities, including mitigating measures, may not contravene either the borrower's national legislation, or its obligations under relevant international environmental treaties and agreements. The borrower addresses impacts on physical cultural resources in projects proposed for Bank financing, as an integral part of the environmental assessment (EA) process.

#### ***OP/BP 4.36 Forests***

69. Forest is defined as an area of land of not less than 1.0 hectare with tree crown cover (or equivalent stocking level) of more than 10 percent that have trees with the potential to reach a minimum height of 2 meters at maturity in situ. A forest may consist of either closed forest formations, where trees of various stories and undergrowth cover a high proportion of the ground, or open forest. The definition includes forests dedicated to forest production, protection, multiple uses, or conservation, whether formally recognized or not. The definition excludes areas where other land uses not dependent on tree cover predominate, such as agriculture, grazing or settlements. In countries with low forest cover, the definition may be expanded to include areas covered by trees that fall below the 10 percent threshold for canopy density, but are considered forest under local conditions. The Bank's forests policy recognizes the importance of forests to reduce poverty in a sustainable manner integrates forests effectively in economic development, aims to reduce deforestation, promote afforestation and enhance the environmental contribution of forested areas. The Bank assists borrowers with the establishment and sustainable management of environmentally appropriate, socially beneficial, and economically viable forest plantations to help meet growing demands for forest goods and services.

#### ***OP/BP 4.37 Safety of Dams***

70. When the World Bank finances new dams, the Policy Safety on Dams requires that experienced and competent professionals design and supervise construction, and that the borrower adopts and implements dam safety measures through the project cycle. The policy also applies to existing dams where they influence the performance of a project. In this case, a dam safety assessment should be carried out and necessary additional dam safety measures implemented.

#### ***OP/BP 4.12 Involuntary Resettlement***

71. This policy is triggered in situations involving involuntary taking of land and involuntary restrictions of access to legally designated parks and protected areas. The policy aims to avoid involuntary resettlement to the extent feasible, or to minimize and mitigate its adverse social and economic impacts. It promotes participation of displaced people in resettlement planning and implementation, and its key economic objective is to assist displaced persons in their efforts to improve or at least restore their incomes and standards of living after displacement. The policy prescribes compensation and other resettlement measures to achieve its objectives and requires that borrowers prepare adequate resettlement planning instruments prior to Bank appraisal of proposed projects.

#### ***OP 4.10 Indigenous People***

72. The term "Indigenous Peoples" is used in a generic sense to refer to a distinct, vulnerable, social and cultural group possessing the following characteristics in varying degrees:

- self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;
- collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
- customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and
- an indigenous language, often different from official language of the country/ region.

73. The Bank provides project financing only where free, prior, and informed consultation results in broad community support to the project by the affected Indigenous Peoples. Such Bank-financed projects include measures to (a) avoid potentially adverse effects on the Indigenous Peoples' communities; or (b) when avoidance is not feasible, minimize, mitigate, or compensate for such effects. Bank-financed projects are also designed to ensure that the Indigenous Peoples receive social and economic benefits that are culturally appropriate and gender and inter-generationally inclusive.

### ***IFC Environmental, Health and Safety Guidelines***

74. The Environmental, Health and Safety (EHS) Guidelines of the World Bank Group (WBG)/International Finance Corporation (IFC), 2008 is the safeguard guidelines for environment, health and safety for the development of the industrial and other projects. They contain performance levels and measures that are considered to be achievable in new facilities at reasonable costs using existing technologies. When host country regulations differ from the levels and measures presented in the EHS Guidelines, projects are expected to achieve whichever is more stringent. If less stringent levels or measures than those provided in these EHS Guidelines are appropriate, in view of specific project circumstances, a full and detailed justification for any proposed alternatives is needed as part of the site-specific environmental assessment. This justification should demonstrate that the choice for any alternate performance levels is protective of human health and the environment.

75. The section 4 of EHS Guidelines for "Construction and Decommissioning" provides additional, specific guidance on prevention and control of community health and safety impacts that may occur during new project development, at the end of the project life-cycle, or due to expansion or modification of existing project facilities.

### **3.3. Implications of the Environmental Policies to the Project**

76. The new shelter/school building with access road will be constructed at the same premises of the existing education institutions and those will be identified during implementation stage. In general the project will increase the safe accommodation of human and livestock during natural disasters by increasing the number of the multi-purpose shelters. The project does not envisage any significant or irreversible environmental/social impact. The environmental impacts of the project are expected to be mostly construction related, on-site and limited within the project boundaries. These impacts can be mitigated through implementation of appropriate environmental code of practice and environmental management plan.

77. Cyclone shelter construction is not clearly categorized in ECR. It may be noted that construction of multi-storied building is considered as the 'Orange B' category which requires Initial Environmental Examination (IEE)/Environmental Assessment. Construction, reconstruction and extension of connecting roads are also classified as 'Orange B' category. Environmental Assessment/IEE will be carried out for the new and rehabilitation of cyclone shelters and connecting roads. If IEE indicates that there are significant environmental impacts from the construction/rehabilitation of cyclone shelter and road; the implementing agency will conduct the EIA as per DOE guidance and require DOE clearance. Site clearance will be required for all connecting road and cyclone shelter.

78. The BNBC, PPR 2008, Bangladesh Labor Act 2006 outlines guidelines for ensuring worker's health and safety during construction works which would have direct implications in MDSP. It would be the responsibilities of the contractors (with supervision of LGED) to make sure that these guidelines are followed in the workplace environment.

79. In view of subprojects nature, the project is classified as a Category 'B' under the WB safeguard policy. OP/BP 4.01 has been triggered to ensure that the sub project design and implementation will be focused on reducing adverse impacts and enhancing positive impacts. A framework approach will be adopted for proper environment management.

80. The new disaster shelter cum school building will be constructed within the boundary of the selected existing education institutions. The activities of the project will not involve any pesticide application. Activities in forest areas or natural habitat or relate to protection of dams will not be supported under this project. Also it is unlikely that any designated physical cultural resources will be affected by the subprojects. Hence OP/BP 4.09, OP/BP 4.04, OP/BP 4.11, OP/BP 4.36 and OP/BP 4.37 will not trigger for this project.

81. It is the responsibility of the respective implementing agency to screen, take mitigation measures and monitor the environmental issues in both Construction and Operation & Maintenance phase.

### **3.4. Environmental Clearance Procedure**

82. The legislative bases for EIA in Bangladesh are the Environmental Conservation Act 1995 (ECA'95) and the Environmental Conservation Rules 1997 (ECR'97). Department of Environment (DOE), under the Ministry of Environment and Forest (MOEF), is the regulatory body responsible for enforcing the ECA'95 and ECR'97. It is the responsibility of the proponent to conduct an EIA of development proposal, the responsibility to review EIA for the purpose of issuing Environmental Clearance Certificate (ECC) rests on DOE.

83. The first step of obtaining Environmental Clearance for the project the proponent is to apply for it in prescribed form, together with a covering letter, to the Director/Deputy Director of respective DoE divisional offices. The application should include a project feasibility study report, the IEE/EAreport with the Environmental Management Plan, No Objection Certificate (NOC) of the local authority; and appropriate amount of fees in 'treasury chalan' (in the present case the amount is BDT 50,000). The EA report will have separate location specific baseline information, environmental analysis and EMP for

each sub-project. The DOE authority reserves the right to request additional information, supporting documents, or other additional materials for the proposed project. Under the conditions specified in the Environment Conservation Rules-1997, the DoE divisional authority must issue environmental site clearance certificates within 60 working days from the date of submitting the application, or the refusal letter with appropriate reasons for such refusal. The clearance issued remains valid for a one-year period and is required to be renewed 30 days prior to its expiry date.

84. Environment clearance has to be obtained by the Local Government Engineering Department (LGED) from the Department of Environment (DOE).

### **3.5. Implication of Land Acquisition Legal Framework to MDSP**

85. The current legal instrument for acquiring lands for public purposes is the 1982 Land Acquisition and Requisition of Immovable Property Ordinance. Land Acquisition Laws and Acts have evolved and changed over the years in this territory from Bengal in British period through Pakistan Era to present time. The system of land administration was moulded to suit the permanent settlement Act of 1793 during the British rule. The then Bengal Tenancy (BT) Act of 1885 was promulgated by the British colonial regime for the interest of the state rights. Subsequently, Land Acquisition Act, 1894 was enacted as the first legislation on acquisition and requisition of property in 1894 in Indian sub-continent (Islam, *et al.*, 2003).

86. The East Bengal Emergency Requisition of Property Ordinance was promulgated on 14 July 1947. After partition of Bengal<sup>3</sup> in August 1947, the Eastern part of Bengal became East Pakistan. The then East Pakistan was in need to acquire lands for construction of government offices, educational institutions (schools and colleges), hospitals and railway stations. A new law labeled 'the (Emergency) Requisition of Property Act 1948' (Act XIII of 1948) was passed to address the emerged situation. In addition, East Pakistan modified and amended Land Acquisition Act 1894 and Law on Requisition in the shape of an Ordinance titled 'Ordinance of 1947'. A number of new acts were promulgated at different stages<sup>4</sup>. The (Emergency) Requisition of Property Act, 1948 was extended from time to time on triennial basis up to last time in 1981. There were some drawbacks in the Emergency Requisition of Property Act, 1948, such as i) the forced nature of acquisition of property, ii) misuse of acquired land, iii) insufficient compensation amount, and iv) long delays in the payment of compensation.

87. Hussain (1995) states that process of determining amount of compensation against acquired land and payment of compensation took longer period of time under the provision of Land Acquisition Act, 1894. However, the basic Act of 1894 had been effectively modified by the Ordinance of 1982 with aim to mitigate the above-mentioned delays. Besides, the ordinance has provision to provide the affected persons with certain safeguards regarding payment of compensation and mitigating misuse of land. Till now those safeguards could not benefit the project affected persons<sup>5</sup>. The 1982 Ordinance has roots in the British colonial Land Acquisition Act of 1894 that laid the basis for the practice of land acquisition in South Asia during the colonial and post-colonial periods. As described by Pittaluga, the

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<sup>3</sup> Two countries, India and Pakistan, emerged through partition of India in August 1947.

<sup>4</sup> Islam *et al.*, 2003; 14-15, Volume One, BANGLAPEDIA

<sup>5</sup> Because most of the affected owners did not have all the essential papers, deeds and documents. Those documents were essential to prove their ownership of acquired property.

1982 Ordinance presents significant challenges in its application, (i) Market value is not given as compensation against acquired land, houses and other assets, (ii) the project affected people who fail to demonstrate legal title to acquired land are not eligible for compensation, (iii) determined compensation rates do not reflect market rates at replacement rates, (iv) payment of compensation in installments has profound impact on the PAPs' failure in purchase of replacement lands or invest in business, (v) Zaman states that land acquisition process is extremely cumbersome. It involves 22 steps, multiple government bodies and agencies and rampant corruption (Zaman 1996).

88. The current legal framework is not adequate to mitigate the adverse impacts associated with land acquisition and involuntary displacement. Its provisions do not fully satisfy the requirements of the Bank's OP 4.12 on Involuntary Resettlement. Also, no other policies are there to complement the acquisition law in ways to assess, mitigate and monitor the adverse impacts that the affected landowners may suffer.

### **3.6. Implication of Social Development and Safeguard: World Bank's Operational Policies**

89. The World Bank's social development and safeguard policies support sustainable poverty reduction by preventing and mitigating undue harm to people and their environment in the development process (in this case, construction of new shelters, rehabilitation and improvement of the existing shelters and the shelter connecting roads). This approach facilitates participation of stakeholders in project design, and has been an important instrument for building ownership among local populations. The World Bank's key social safeguards operational policies (OP) and Bank Procedures (BP) include the OP/BP 4.12 on Involuntary Resettlement and OP/BP 4.10 on Indigenous Peoples. The Bank's Operational Policy 4.12 on Involuntary Resettlement is triggered where involuntary land acquisition and displacements are involved. The policy aims to avoid involuntary resettlement to the extent possible, or to minimize and mitigate its adverse social and economic impacts. The displaced people are facilitated to ensure their active participation in resettlement planning and implementation, and its key economic objective is to assist displaced persons in their efforts to improve or at least restore their incomes and standards of living after their relocation.

90. Given the approach of subproject identification and implementation, the project does not envisage any involuntary resettlement or acquisition of land. Lands owned by the sponsoring local educational and social institutions will be used for construction of new shelter and horizontal extension of existing ones in the nine coastal districts. In cases of unavailability of institutional lands, voluntary donation, direct purchase or exchange by the sponsoring institutions will be resorted to. However, displacement of people may be involved in critical circumstances where vacant land in possession of the sponsoring institutions will not be available. Although unlikely, LGED may also opt to obtain private land through involuntary acquisition at absolute requirement cases. The project therefore, triggers the OP 4.12 on Involuntary Resettlement that requires that the economic, social, and environmental risks out of relocation/resettlement are mitigated and livelihoods of the displaced persons are restored. Relocation/resettlement may cause severe long term hardship, impoverishment, and damage unless appropriate measures are carefully planned and carried out. LGED will seek to use lands owned by the sponsoring institutions. Involuntary resettlement is envisioned only when the sponsoring authority will be using



private lands or vacating its own land from encumbrances. The overall policy of involuntary resettlement LGED will comply with, are the following:

- Involuntary resettlement should be avoided where feasible, or minimized, exploring all viable alternative project designs.
- Where it is not feasible to avoid resettlement, resettlement activities should be conceived and executed as sustainable development programs, providing sufficient investment resources to enable the persons displaced by the project to share in project benefits.
- Displaced persons should be meaningfully consulted and should have opportunities to participate in planning and implementing resettlement programs.
- Displaced persons should be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.

Although the project area is fixed for MDSP, actual sites will be identified during implementation phase and impacts on tribal peoples existent in all the 9 project districts will be known only when the specific sites for shelter and shelter connecting roads will be identified on ground. Considering the characteristics analysis of tribal peoples in the project districts, as covered in the Bank OP 4.10 on Indigenous Peoples, and given the unlikelihood of any adverse impact on them (*see section 5.2.6*), the **OP 4.10 has not been triggered to the project**. Even though, in circumstances when tribal peoples will be identified in a subproject catchment area, LGED will avoid any adverse effects on the tribal peoples and undertake measures to ensure culturally appropriate design and operation strategy those are also gender and intergenerationally inclusive. Depending on the presence of tribal peoples among the beneficiaries, LGED will adopt the following strategic measures in the preparation, design and implementation of subprojects:

- Select subproject interventions and determine their scopes to avoid impacts on tribal peoples.
- Ensure free, prior and informed consultation with the tribal peoples where subproject identifies tribal peoples among the beneficiaries.
- Ensure subproject benefits are accessible to the tribal community living in the subproject area.
- Ensure tribal peoples participation in the entire process of identification, planning, and implementation of subprojects.
- Wherever possible, adopt measures to reinforce and promote any available opportunities for socioeconomic development of the tribal peoples.

### **3.7. World Bank Policy on Access to Information**

91. In addition to the safeguard policies, the Access to Information Policy also relates to safeguards. To promote transparency and facilitate accountability, Bank Access to Information Policy supports decision making by the Borrower and Bank by allowing the public access to information on environmental and social aspects of projects in an accessible place and understandable form and language to key stakeholders. The Bank ensures that relevant project-related environmental and social

safeguard documents, including the procedures prepared for projects involving subprojects, are disclosed in a timely manner before project appraisal formally begins. The policy requires disclosure in both English and Local language and must meet the World Bank standards.

## **PART B-ENVIRONMENTAL & SOCIAL ISSUES AND ASSESSMENT**

## 4. ENVIRONMENTAL ASSESSMENT

### 4.1. Basis of Assessment

92. For carrying out “overall environmental assessment” of the MDSP, field surveys, consultations with different stake holders, Focus Group Discussions (FGDs) , review of EA reports of ongoing ECRRP etc. were made. Field visits were conducted to two proposed preliminary project sites (exact location of the construction/reconstruction is yet to be identified) to be possibly considered and three completed project sites under ECRRP. Table 4-1 shows the name of the visited sites.

**Table 4-1 Sites Visited**

Name of the site	Upazilla/Subdistrict	District
<b>Proposed preliminary project sites of MDSP</b>		
Shakchar Jabbar Master Community Primary School	Lakshmipur Sadar	Lakshmipur
Char Parbati Rahimia Government Primary School	Companiganj	Noakhali
<b>Completed project sites under ECRRP</b>		
Bhoroshakathi Government Primary School	Ujirpur	Barisal
Dakhin Muradia Government Primary School	Dumki	Patuakhali
Char Kalaiya Madrasa Government Primary School	Bauphal	Patuakhali

93. During field visits, discussions were held with the different stakeholders on different issues; discussions on recently completed projects of ECRRP; proposed sub-projects to be implemented under MDSP; and capacity and institutional arrangement for environmental management of the proposed sub-projects. Focus Group Discussions (FGDs) were held during these field visits to identify issues and problems to enable the institution to corrective measures and to identify lessons and opportunities to enhance project implementation mechanism. Discussions also have been held with the LGED officials on different aspects of project implementation and management, particularly focusing on existing capacity and institutional arrangement for environmental management of the proposed sub-projects.

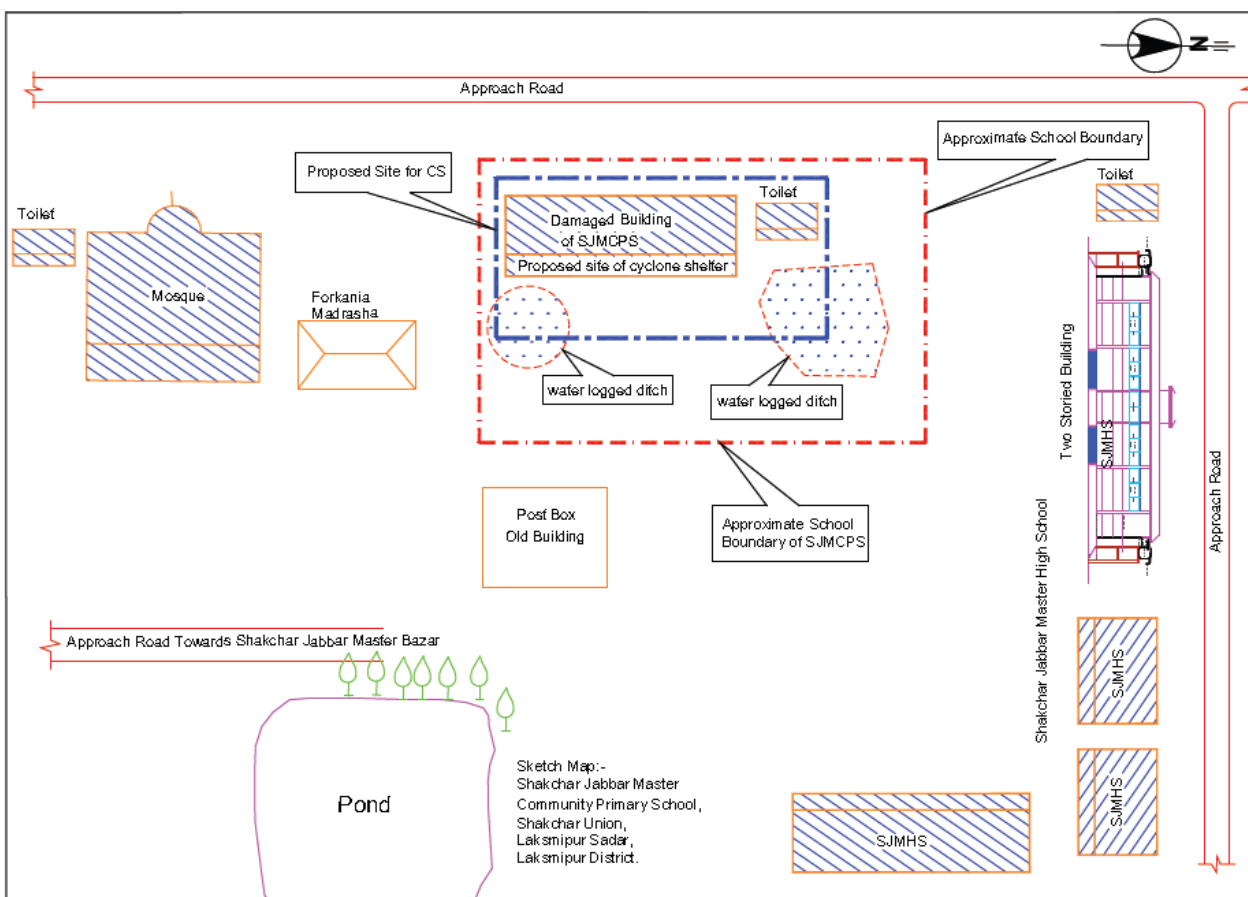
94. In order to develop a comprehensive Environmental Management Framework (EMF) for the MDSP, an environmental baseline study was carried out in areas within and surrounding of these visited sites. The specific objectives of the baseline study were to gather information on the existing physical and ecological surveys and other studies (e.g., physical infrastructures, water supply and sanitation, solid waste management, water quality, and noise level measurements) of the areas within and around the project sites, and to assess peoples’ perception on different aspects of the proposed project. The data and information gathered during the baseline study provide a detailed description of the existing conditions of physical and biological environment in and around the project areas. The possible environmental impacts of the sub-projects under MDSP have been evaluated against these baseline environmental conditions.

### 4.2. Baseline of sample sites from Newly Proposed District (Non-sidr area)

95. LGED is in the process of identification of sub-projects for possible implementation under MDSP. These potential subprojects will be further reviewed and analyzed for preparing short-list of sub-

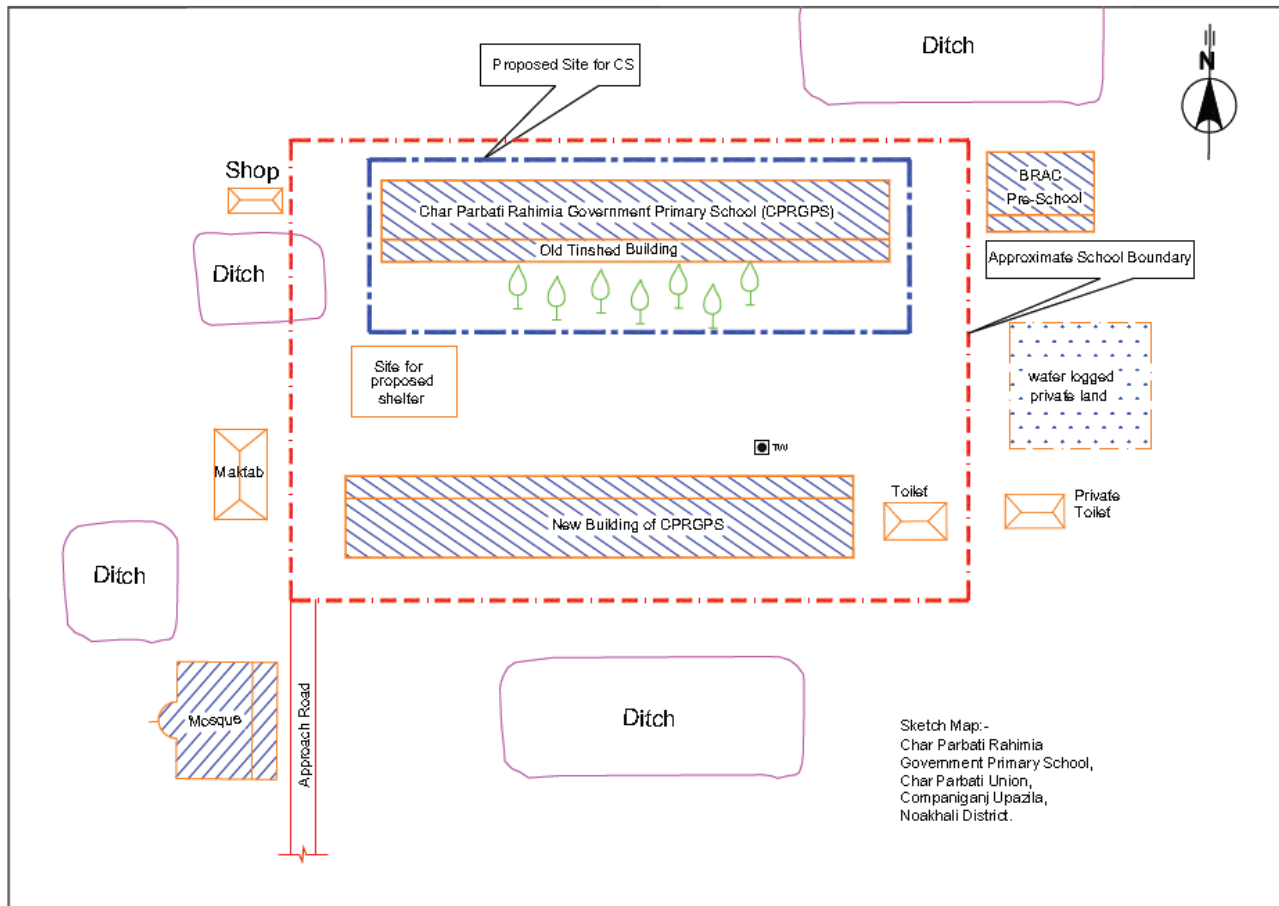
projects on priority based for possible implementation under MDSP. Since exact location of the construction/reconstruction is yet to be identified, two schools were picked on sample basis to understand the overall baseline condition and possible environmental impact from the proposed activities. Two orientation and FGD meetings were arranged at these sites. The sites were visited on April 05, 2014 and April 06, 2014 and collected relevant information on EA.

96. Shakchar Jabbar Master Community Primary School is located at Shakchar village in Shakchar Union under Lakshmipur Sadar Upazila of Lakshmipur district. The site is bounded by Shakchar Jabbar Master High School to the North, Mosque of Shakchar Bazar to the East, road to the South and another road to the West.



**Figure 4-1: Proposed Shakchar Jabbar Community Primary School cum Disaster Shelter**

97. Char Parbati Rahimia Government Primary School is located at Char Purbani Ward in Char Purbani Union under Companiganj Upazila of Noakhali district. This site is bounded by a pond and agricultural lands to the North, homesteads to the East, homesteads, pond and mosque to the South and homesteads and shop to the West.



**Figure 4-2: Proposed Char Parbati Rahimia Government Primary School cum Disaster Shelter**

98. A summary of the baseline of the these above two sites are given below

99. **Climate-** Meteorological conditions of the middle South part of Bangladesh are more or less similar in respect to temperature, rainfall, humidity, and wind (speed and direction). It was reported that the annual average temperature ranges from a maximum of 35°C to a minimum of 12°C; and annual rainfall is about 3200mm. Temperature has been increased very slightly in these areas over the years in the current decade due to global warming. Similarly humidity (average range 80-90%) has also been increased to negligible extent. On the contrary, rainfall has been on decline in the current decade. Wind speed and direction (Southeast wind 10 kph to 30 kph in general) are also slowly changed over the years.

100. **Water Quality (surface and groundwater)-**There are 3 deep tube wells, one at Shakchar Jabbar Master Community Primary School, another tube well at High School and the third one at the adjacent Bazar. It was reported that the water is arsenic free ( < 0.01 mg/l); however, tube well water is contaminated with iron to some extent (1.1 mg/l). There is a pond in the east side of mosque of this bazaar. Water of the pond is used for bathing and doing ablution as well.

101. There is one tube well at Char Parbati Rahimia Government Primary School. Water of this tube well was tested for arsenic and result of the arsenic test showed that water of this tube well is arsenic free( < 0.01 mg/l). However, iron particles are present in tube well water to negligible extent ( 0.9 mg/l). Pond water is used for cooking purpose.

102. **Fisheries-** Fish is cultivated in the ponds although a good number of ponds dry up during March to May before the rains. Fish species found in the locality are common carps, shrimps and prawns, other brackish water species and local indigenous species. The preferred species for consumption include carps, prawns and shrimps, cat fish and some local varieties. The endangered fish species are not reported in the area. Prawns and shrimps are cultivated using the river water.

103. **Flora and Fauna-**The project area has some flora of commercial importance. The major tree species found in the area are mahogany, betel nut, rain-tree and (in Bengali and colloquial) Simul, Sishu, Arjun, Kul, Minjiri, Jarul, Hizal, Sheaora, Khaer, Siris etc. No endangered floral species are reported. The dominant fruit-bearing trees include mango, jackfruit, bananas, coconut etc.

104. Besides domestic animals, wild dogs, jungle cat, jackal, monkeys, squirrels, mongoose and rodents like ants and snakes are reported. Some birds found in common Bengali name include Chorui, Doel, Shalik, Chil, Pecha, Kak, Tuntuni, Bulbuli, Kokil etc. Endangered species are not reported.

105. **Flooding and Drainage-**The selected area falls on the medium highland and from the FGD, it was informed that the most selected areas are flood free and elevation is higher than normal local flood level. Incessant rains cause temporary water stagnation and water drains out in several hours. Cyclones cause water stagnation and other impediments causing miseries to the people.

106. **Land/soil type-** Land/soil types are sandy and (ii) sandy loam in the catchment area of Shakchar Jabbar Master Community primary school cum cyclone shelter. Soil types are (i) clayey, (ii) clay loam, (iii) sandy soil in the catchment area of Char Parbati Rahimia Government Primary School cum Cyclone Shelter.

107. **Noise/Dust Pollution-** Vehicles such as motor cycle, tempo, tractor etc. generate noise in the subproject area but within tolerable limit. No other perceptible sources of noise generation such as factories, brick field, industries, etc. were found near by the sub-project area. The base line of noise level and air pollution in the subproject area has been noticed within the acceptable limit.

108. **Economic development-** There are lined (pucca) and unlined (katcha) roads in Shakchar and Char Parbati areas which contribute to road transportation and thereby contribute to the economic development of this locality. The existing pucca road is connected to Upazila road. Transportation using by the people of Char Parbati include (i) CNG tri-wheelers, (ii) auto rickshaw, (iii) rickshaw, (iv) bicycles etc. There is electricity supply in Char Parbati.

109. **Agricultural development-** In Shakchar Union major crops include paddies, IRRI, Aus and Aman, pea-nut (badam), soya bin, wheat, vegetables, gourds, pumpkin, etc. On the other hand, in Char Parbati Union major crops include Aman, Aus and IRRI paddies, various pulses (lentil, kheshari), badam, wheat, garlic, etc.

110. **Land use-** In Shakchar Union lands have been used for various purposes, such as habitats for human beings (15% of total lands), agriculture (80% of total lands), fishery (3% of total lands), poultry (1% of total lands) and dairy farms (1% of total land). On the other hand, in Char Parbati Union, lands are being used for habitats of human beings (20% of total lands), agriculture (75% of total lands) and fishery and other farms (5% of total lands).

#### **4.3. Assessments of the Ongoing Phase of ECRRP (Sidr sites)**

111. The ECRRP area mainly covered the districts namely, Bagerhat, Barguna, Barisal, Bhola, Jhalokathi, Khulna, Patuakhali, Pirojpur and Satkhira. The overall environmental assessment of completed project under ECRRP is compiled on the basis of the surveys, subproject specific EA report with baseline and management plan, the periodic evaluation reports of the consultants and the evaluation reports of the M&E Consultants for the ECRRP and field visit. The ECRRP- Component B covers construction of 230 new multi-purpose shelters, repair and improvement of 250 existing schools-cum-cyclone shelters and construction of 130 km of access roads. Constructions of these shelter and killas in the remote char areas have increased the sense of security of the communities as well as livestock during natural disaster. Sites were selected with the consensus of the people. However, the building location, design options and layout of the design are confirmed on actual field situation and the recommendation from the environment team of Bank. The recommendations on design are mainly, (i) constructing separate bathrooms for men and women (ii) ensuring safe water supply by constructing deep tubewell on the basis of water test report (iii) rain water harvesting facilities. The shelters are designed to withstand wind speeds of 260 km/hour and placed higher than the expected surge level. Access facilities to these shelters such as connecting roads, drinking water facilities, lighting facilities etc. have been provided.

112. Each of the activity under ECRRP was environmentally assessed before construction in accordance with the environmental management framework (EMF). Baseline surveys were done at each subproject and the site specific management plan was prepared. The upazilla Engineer or Sub-Assistant Engineer of LGED and the Field Resident Engineer of the Consultant team mainly conducted the



screening work and the environmental specialist of Design and Supervision Consultants (DSM) endorsed the screening format. Most of the screening checklist revealed that the sub-projects did not generate any significant adverse impact on pre-construction, construction and post-construction phases in the physical and social environment of the area.

113. Major environmental concerns in the context of the sub-projects of ECRRP are site specific and temporary and construction related. The issues are mainly dust, noise, waste disposal, water supply and sanitation, safety measures in stockpiling and transportation of stockpiles of construction and site wastes. The cost of the environmental management plan (EMP) has been estimated and included in the bill of quantities of bid document. Frequent field visits and close supervision by the field staff ensure the implementation of EMP. In addition, Monitoring and Evaluation (M&E) Consultant under Project Coordination Management Unit (PCMU) is responsible for reviewing the EA and supervising implementation of the overall EMF.

114. Tree plantation is an important issue for environmental mitigation and enhancement and to maintain bio-diversity in these disaster prone areas. Since tree plantation is taken up after construction, the School Management Committees (SMC) has come to an agreement to make the plantation program.

115. The detail assessment report on 3 completed shelters (i) Bhoroshakathi GPS/CS, Upazila-Ujirpur, District-Barisal, (ii)Dakhin Muradia GPS/CS, Upazila-Dumki, District-Patuakhali and (iii) Char Kalaiya Madrasa/CS, Upazila-Bauphal, District- Patuakhali of Different Designs options under ECRRP is shown in the Annex-1.

### **Lessons Learnt**

116. No major environmental problem has been reported in the project implementation of the original project by far. It was notified from the M&E Consultant that some EIA reports for Cyclone Shelters had not been received before commencement of the respective construction. Further attention is required in timely preparation and review of the EA reports and the monitoring of EMP implementation.

117. The compliance of the environmental issues will smoothly ensure if the concerned field staffs have the technical background or training programs are arranged for them on supervision for the implementation of Environmental Management Plan (EMP).

### **4.4. Overall Baseline of MDSP Project Area (non-Sidr and Sidr affected area)**

118. The project area mainly covering 9 coastal districts including Sidr hit Bhola, Barisal, Pirojpur and Patuakhali, and five other coastal districts including Chittagong, Cox's Bazar, Feni, Laksmipur and Noakhali. The base line of the project area is formulated mainly from the IEE/EIA reports of the subprojects under ECRRP, field observations and spot analyses, and Focus Group Discussions (FGD). A summary of the baseline of the overall project area is given below.

### **Climate**

119. Meteorological conditions of the southern Bangladesh are more or less similar in respect to temperature, rainfall, humidity, and wind (speed and direction). The average rainfall per year is varying from 300 to 400 centimeters. The temperatures varying from 32 to 42 degrees Celsius during summer

and rainy season (March to October and 12 to 25 degrees in winter during the dry months (November to February). Maximum humidity is 90% during wet months (July to September) coming down to 60% in dry months. The wind speed fluctuates between 15 to 25 kilometer per hour (Kph) during wet and 7 to 12 Kph during dry months. These areas are cyclone prone and it usually occurs 2 to 3 times in a year during April-June and October-November.

### **Geology/Seismology**

120. The project land area in general is flat with medium high and medium low land type with patches of high and low land. Soil is mainly composed of non-calcareous grey flood plain soil. The project area of MDSP is situated in the villages as well as semi-urban areas.

### **Noise and Air**

121. The base line of noise level and air pollution in most of the subproject area has been noticed within the acceptable limit (around 40 dBA).

### **Water logging and Drainage**

122. From the FGD, it can be stated that the most selected areas are flood free and elevation is higher than normal local flood level. The area is not affected in normal floods. Due to heavy rainfall sometimes the area became flooded; but as drainage is good water drains out quickly and there is no water logging problem. It has been observed that the drainage systems are generally linked with the adjacent outfall or nearby river ensuring good drainage in the semi urban areas of Bangladesh. In general, the areas are surrounded by road mostly unlined (katcha) and semi-lined with a few lined (pucca) connecting road system.

### **Surface and Ground water quality**

123. The proposed project under the coastal area and the rivers fall under the natural system of high and low tides. There are small and medium ponds, which are used for multiple purposes. People drink deep tube-well water. At many subproject sites, the numbers of tube-well is very few resulting water crisis during the dry season. Pond water is generally sweet. River water is saline of variable intensity.

124. Ground water of the project area is slightly to moderately saline, most of the area were reported to be arsenic free (<.01 mg/l) but contains iron (around 0.7-1.3 mg/l). The depth of the shallow water (not drinkable) varies from 2.0 to 5.5 m. But the depth for drinkable water is varying from 50 m to 200m. For drinking and other domestic purposes, people usually use deep tube-well water. Harvested water from the rains also used in some areas where ground water exploration is difficult. There are small and medium ponds, which are used for multiple purposes. When water from the main source is saline, the ponds are also used as water reservoir of sweet/rain water. A proportion of the population also uses the pond water for drinking purposes. Moreover, as saline water is not useable the construction work has been concentrated during rainy season. Most of the schools are provide deep tube well for drinking water purposes.

### **Biological/Ecological Resource**

125. The projected area for construction has some existence of flora and fauna of some commercial value. No particular endangered animal species has been observed and animals in general would not be affected due to the construction work.

#### **Aquatic Habitat:**

126. Catching fish and crabs is the major profession of the people. Fish availability was reported in the river and almost in all the water bodies in the project area. The preferred species for fishing are major and minor carps, some local varieties and prawns. Fish is cultivated in the pond. The endangered fish species were not reported in the study area. Prawn and shrimp are cultivated using the river water.

127. Fish availability has been reported in the rivers and almost in all the water bodies in the project area. Fish farming is popular during monsoon season. Fish species found in the locality are common carps, shrimps and prawns, other brackish water species and local indigenous species. The preferred species for consumption include carps, prawns and shrimps, cat fish and some local varieties. The endangered fish species are not reported in the area. Prawns and shrimps are cultivated using the river water. The aquatic environment includes river, canals, water bodies and ponds. Most of the area of the agricultural land is inundated during the monsoon season and dries up in the dry season every year. When cyclone strikes near the coast the most of the project area is inundated by tidal wave result in intrusion of saline water in the locality. The biological characteristics indicated presence of moderate variety of species and aquatic plants. Blue green algae and planktons are also found in ponds, water bodies and canals. A list of wet land flora as found in the project area listed in Bengali includes Helencha, Hejol, Kudipana, Kuchuripana, Shapla, Shaluk, Lotus, Nol, Sola, Kalmi etc. Aquatic fauna reported area includes crabs and oyster/ear shell.

### **Terrestrial Habitat**

128. The proposed area does not have any notable wildlife habitat. Some migrant and local birds; animals like wild boar, jungle cat, jackal, monkeys, squirrels, mongoose and rodents like rats and snakes are reported. The main endangered animals like Wild cow, Wild Buffalo, Nil-gai, Nakata duck, Peafowl, Mugger etc. are not reported.

129. Any notified reserve forests area was not reported in the subproject area. The major tree species found in this area are (in Bengali and colloquial) Simul, Sishu, Arjun, Kul, Minjiri, Jarul, Hizal, Sheaora, Khaer, Siris etc. No endangered floral species were reported. The dominant fruit-bearing trees available are mango, jackfruit, bananas, and coconut. Besides domestic animals, wild dogs, jungle cat, jackal, monkeys, squirrels, mongoose and rodents like ants and snakes are reported. The endangered animals like Wild cow, Wild Buffalo, Peafowl, Mugger Crocodile etc. are not reported. Some birds found in common Bengali name include Chorui, Doel, Shalik, Chil, Pecha, Kak, Tuntuni, Bulbuli, Kokil etc.

### **Land Use**

130. Land/soil types are (i) clayey, (ii) clay loam, (iii) sandy soil in the most of the areas Cyclone Shelters. The land is plain and land type consists of plain land. According to the data and participants information, most of the surrounding lands are used for fish farming and agricultural product farming.

#### **4.5. Overall Environmental Impacts**

131. The investment on the physical component yields net positive benefit to the local community. The shelters constructed so that they are used as primary schools when no disaster. The shelters are constructed with separate bathrooms for men and women. Safe water supply is ensured, rain water harvesting facilities is included and solar panels are provided. In addition, connections to existing road are ensured by constructing a link, if needed. One floor is constructed for livestock and animals and top floor for human shelter. Ramp has been provided for disable people and easy movement of livestock. The shelters are designed to withstand wind speeds of 260 km/hour and placed higher than the expected surge level. The negative environmental impacts will be triggered mostly from the construction related activities. These impacts are mostly temporary and limited within project boundary. The anticipated impacts are, drainage congestion and water logging during the construction period, temporary surface water and ground water pollution, construction related dust, air and noise pollution etc. Also the Environmental Health and Safety (EHS) issues like occupational safety of workers and safe movement of students at construction area is vital issues during construction.

132. The possible impacts as anticipated during subprojects implementation are summarized as below.

##### **Construction Camp**

133. Improper selection of the location camps may interrupt agricultural product or drainage congestion of natural water body. Also the improper disposal of Generated of sewage and solid waste may causes the water/ environmental pollution. The people and the changes they bring will have significant impacts on the local communities and social structures. Substantial numbers of workers will inhabit the area in temporary camps loading local infrastructure and causing ambient social influence.

##### **Surface and Ground Water Pollution**

134. Water pollution may result from discharge of wastewater (e.g., liquid waste from labor sheds), spills and leaks of oils/ chemical into nearby water bodies (e.g., drain, pond, khal, drain, river). The presence and existing use of water bodies surrounding the sub-project site would determine the level of impact. For example, if a pond located close to a sub-project site is being used for washing/ bathing or for fish culture; pollution of the pond from sub-project activities would generate significant adverse impacts. The subprojects may cause pollution of surface water due to improper disposal of household wastes from labor camps or construction wastes of the area. Also and may cause to pollution of ground water due to improper septic tank and soak well construction.

##### **Environmental pollution from solid/ construction waste:**

135. In some sub-projects, construction debris is likely to be generated from different sub-project activities. Solid wastes will also be generated from labor sheds. Improper management of construction debris and solid waste could cause blockage of drainage line/ path and environmental pollution.

##### **Drainage Congestion and Water Logging**

136. During execution of civil engineering projects, temporary drainage congestion often results from obstruction to natural flow of drainage water due to the storage of materials, piled up excavated material/ soil, and temporary embankments constructed to keep the work area dry. Such congestion is particularly important at the project sites adjacent to low-lying areas. Drainage congestions could create significant discomfort to people living in project-surrounding areas. The implementation of sub-project may create drainage congestion or water logging problem in the area and contribute any risk to natural systems due to improper dumping of construction material or waste or wrong site selection of the shelter.

#### **Noise /Air/Dust Pollution**

137. Noise/air pollution could result from a wide range of construction activities, including movement of vehicles (carrying equipment/material to and from site), operation of construction equipment and generators. Significant noise is generated from operation of pile drivers, bulldozers, dump trucks, compactors, mixing machines, and generators, etc.

138. The noise/air/dust pollution is considered an important issue for the students and teachers during the pre- and construction period of the schools cum cyclone shelter. It may cause health hazard due to air emanated from machineries or dust generated during dismantling of the materials during pre-construction and construction work. Considering the health hazard, the contractors were advised to schedule the major construction activities especially piling on holidays and reschedule the timing of the classes. They are also advised for constructing fencing around the construction site so that students do not go and play there.

#### **Disruption of Natural Systems and Bio-Diversity**

139. The subprojects would not affect the ecosystem of any wild life habitat, populations, corridors and movement nor would they cause negative effects on rare, threatened or endangered species of flora or fauna or their habitat.

#### **Trees**

140. A number of trees have been needed to cut at some cyclone shelters site due to the new construction and rehabilitation work respectively. For Cyclone shelter, the school committee with the assistance of the Contractor is responsible for plantation of fruit and timber tree species in the school premises after finishing the construction work.

#### **Health and Safety**

141. There may be some health hazards and safety risk to the workers whilst they work. The facilities for proper sanitation and drinking water arrangement, first aid and personal protection equipment (PPE) for workers need to be ensured. Also for shelter construction, student safety is an important concern and the contractor is asked for constructing fencing around the construction site.

#### **Socio-economic impacts:**

142. Possible impact on indigenous population, land acquisition and resettlement issues are also an important consideration. The other possible socio-economic impacts, which include the following:

- traffic congestion,
- health and safety,

- employment and commercial activities,
- impact on archaeological and historical sites, and safeguarding physical cultural resources (PCR)

## 5. SOCIAL ISSUES AND LIKELY IMPACTS

143. LGED has carried out a study of the social issues and likely impacts of MDSP through literature review and consultation with the beneficiary communities in selected project districts. The study was intended to identify the stakeholders including beneficiaries, impacted people and other relevant persons, groups and entities related to the project. The SA facilitated systematic participation of relevant stakeholders in subproject design and implementation, and increases the likelihood that the targeted beneficiaries enjoy access to those facilities without any discrimination. The study articulates the project's social development outcomes and impacts and decides application of operational policies (OP) on social safeguards including OP 4.10 on indigenous peoples and OP 4.12 on involuntary resettlement. It captures previous experience in social development and recommends measures to avoid, minimize, mitigate and compensate adverse social impacts of subproject interventions under the project. In view of the project objectives, the study covers baseline socioeconomic profile of target communities for understanding their vulnerability to disasters and needs for disaster shelters.

### 5.1. Socioeconomic Baseline of Project Area

#### 5.1.1. Beneficiary Population

144. Rehabilitation and construction of multipurpose shelters and shelter connecting roads will benefit communities in the 9 coastal districts focusing the 7420 rural villages. About 17 million people in 3.5 million rural households are targeted for gradual secured shelter at disaster events. Total population of the project area is 22.9 million where 11.6 million are women. Average household size is 4.8 and it is the highest in Cox's Bazar and the lowest in Pirojpur. Population density is 951 on an average which is

close to the national average of 1015 persons per km<sup>2</sup>. However, population density is higher than the national average in Chittagong, Feni and Lakshmipur districts, and less than national average in Barisal, Bhola, Patuakhali, Pirojpur, Cox's Bazar and Noakhali. Average male to female ratio in the project area is 97 which is the lowest in Lakshmipur and Noakhali districts (92) and the highest in Cox's Bazar (104) followed by Chittagong (102), Bhola (99), Barisal and Patuakhali (96) and Feni (93).

**Table 5-1: Project Beneficiary Population**

District	Total population (No.)	Population living in rural areas (no.)	Male/Female Ratio	Household Size	Density
Barisal	2,324,310	1,805,294	96	4.5	835
Bhola	1,776,795	1,533,478	99	4.8	522
Patuakhali	1,535,854	1,333,972	96	4.4	477
Pirojpur	1,113,257	930,626	97	4.3	871
Chittagong	7,616,352	4,463,723	102	4.9	1442
Cox's Bazar	2,289,990	1,790,979	104	5.5	919
Feni	1,437,371	1,143,629	93	5.1	1451
Lakshmipur	1,729,188	1,466,191	92	4.7	1200
Noakhali	3,108,083	2,611,383	92	5.2	843
Project Area	22,931,200	17,079,275	97	4.8	951

Source: BBS, Population and Housing Census 2011

### 5.1.2. Project Area Population by Age Group

145. Project area population constitutes infants up to 4 years of age, primary school goers between 5 to 9 years and senior citizens over the age of 64 years. Rest of the population is between 10 to 64 years in three age groups, 10 to 24 years, 25 to 49 years and 50 to 64 years. Infants constitute 11% of the project area population ranging from 9.6% in Pirojpur to 13.3% in Cox's Bazar. People in the old age group (65+) constitute 5% of the population which proportion is similar in Bhola (4.8), Feni (5.4), Lakshmipur (5.2) and Noakhali (4.9). Proportion of old age people is far less than average in Chittagong (3.8) and Cox's Bazar (3.1) and higher in Barisal (5.8), Patuakhali (5.6) and Pirojpur (6.5). Table 5-2 provides the details of the population distribution by age. Infants and old age people are the most critically at risk at the events of disaster along with the girls and women. Shelter management committees will adopt priority access right and privileges for these populations.

**Table 5-2: Project Area Population by Age**

District	Percentage of population in the age group (years)					
	0-4	5-9	10-24	25-49	50-64	65+
Barisal	9.8	12.9	30.0	31.2	10.2	5.8
Bhola	12.1	15.2	29.9	29.5	8.6	4.8
Patuakhali	10.4	13.4	27.8	32.5	10.2	5.6
Pirojpur	9.6	12.2	28.5	32.5	10.6	6.5
Chittagong	10.0	11.9	33.7	32.6	8.0	3.8

Cox's Bazar	13.3	15.8	33.5	27.8	6.6	3.1
Feni	10.6	12.4	33.3	29.4	12.0	5.4
Lakshmipur	11.9	14.6	31.1	28.8	8.5	5.2
Noakhali	12.3	14.9	32.2	27.7	8.1	4.9
Project Area	11.1	13.7	31.1	30.2	9.2	5.0

Source: BBS, Population and Housing Census2011

### 5.1.3. Education in Project Area

146. Education catalyzes socioeconomic practice of human being and plays in eradication of poverty. The Poverty Monitoring Survey 2004 showed that poverty incidences of the literate were much lower than the illiterates. Although quality is questioned, there is a gross improvement in the education sector in the country. New generation, irrespective of gender is making their academic choice following the market demand for various skills and technical knowledge. In the project area, literacy among the population is 53.58% which is higher than the national average (51.8%). According to the population and housing census 2011, literacy rate is the highest in Pirojpur (64.9%) followed by Barisal (61.2%), Feni (59.6%), Chittagong (58.9%), Patuakhali (54.1%) and Noakhali (51.3). Literacy rate remained below the average in Bhola, Cox's Bazar and Lakshmipur. Literacy rate among male is still higher than the female populations. Although Bangladesh has advanced in female education through various incentive programs, there is still discrimination between genders in education. Table 5-3 shows the details of literacy information in the project area.

**Table 5-3: Literacy among Project Area Population**

District	Literacy Rate (%)		
	Total	Male	Female
Barisal	61.2	61.9	60.6
Bhola	43.2	43.6	42.9
Patuakhali	54.1	56.2	52.0
Pirojpur	64.9	65.0	64.7
Chittagong	58.9	61.1	56.7
Cox's Bazar	39.3	40.3	38.2
Feni	59.6	61.1	58.3
Lakshmipur	49.4	48.9	49.8
Noakhali	51.3	51.4	51.2
Total	53.5	54.4	52.7
National	51.8	54.1	49.4

Source: BBS, Population and Housing Census2011

### 5.1.4. Distribution of Population by Religion

147. Islam is the first major religion in Bangladesh and more than 90% of its population is Muslim. Hinduism is the religion for the second largest population and constitutes 8.39% of the total population.



The rest are communities under Christianity, Buddhism and other religions/faiths. Compared to the national average, proportion of Muslims and Hindus in the project area is similar but the Buddhists are higher due to higher number of Buddhist population in Chittagong and Cox's Bazar. People in other religions are smaller in the area compared to the national average. Table 5-4 shows distribution of project area population by religion. It was learnt from the ongoing ECRRP that communities are in harmony by religion and there is no reported discrimination in accessing the shelters during cyclones.

**Table 5-4: Population by Religion**

District	Percentage of population by Religion				
	Muslim	Hindu	Christian	Buddhist	Others
Barisal	87.772	11.690	0.526	0.010	0.003
Bhola	96.550	3.442	0.004	0.002	0.002
Patuakhali	93.017	6.869	0.022	0.088	0.004
Pirojpur	83.170	16.785	0.019	0.019	0.006
Chittagong	86.901	11.311	0.098	1.591	0.099
Cox's Bazar	93.972	4.264	0.066	1.652	0.046
Feni	94.121	5.828	0.013	0.028	0.010
Lakshmipur	96.548	3.436	0.006	0.007	0.003
Noakhali	95.427	4.522	0.030	0.018	0.003
Total	91.007	8.147	0.101	0.706	0.040
National	90.43	8.39	0.56	0.37	0.25

*Source: BBS, Population and Housing Census2011 (Computed)*

### 5.1.5. Tribal Communities

148. About 1.6 million of the national population in Bangladesh (144.04 million) belongs to the 45 different small ethnic groups officially recognized as tribes, minor races, ethnic sects and communities commonly known as tribal peoples. These peoples are concentrated in the north, and in the Chittagong Hill Tracts (CHT) in the south-east of the country commonly known as tribal peoples. However, tribal peoples are also scattered in small proportion all over Bangladesh. A total of 49,531 tribal peoples are living in the 9 project districts (8.7% of total tribal population in Bangladesh) of which 68% are living in the rural areas. Half of the tribal communities in Barisal, 68% in Bhola, 81% in Patuakhali, 89% in Pirojpur, 67% in Chittagong, 72% in Cox's Bazar, 56% in Feni, 16% in Lakshmipur and 20% in Noakhali are living in the rural areas. Table 5-5 provides the concentration of tribal peoples in the project districts. Chakma, Garo, Tripura, Khumi, Rakhaine, Malpahari, Dalu, Marma, Tanchaynga, and Barmon are the major tribes living in the project districts. Tribal concentration in the project districts is higher in Chittagong, Cox's Bazar and Patuakhali compared to the other districts.

**Table 5-5: Tribal Population in the Project Area**

District	Tribal population (No.)	Living in rural areas (No.)	Percentage of rural tribal peoples with respect to total population	Ethnic groups
Barisal	76	50	0.002	Chakma, Garo, Tripura and others
Bhola	57	68	0.003	Chakma, Khumi, Garo and others
Patuakhali	1,399	81	0.085	Rakhaine, Chakma, Tripura and others
Pirojpur	53	89	0.005	Malpahari, Chakma, Dalu and others
Chittagong	32,165	67	0.481	Tripura, Chakma, Marma and others
Cox's Bazar	14,551	72	0.583	Rakhaine, Tanchaynga, Chakma and others
Feni	639	56	0.032	Chakma, Barmon, Tripura and others
Lakshmipur	244	16	0.003	Chakma, Barmon, Tripura and others
Noakhali	347	20	0.003	Chakma, Barmon, Tripura and others
Total	49,531	68	0.197	Chakma, Garo, Tripura, Khumi, Rakhaine, Malpahari, Dalu, Marma, Tanchaynga, Barmon, and others

Source: BBS Population and Housing Census 2011

149. **Identification as distinct indigenous cultural group:** The small nationalities residing within the 9 project districts (Chakma, Garo, Tripura, Khumi, Rakhaine, Malpahari, Dalu, Marma, Tanchaynga, Barmon, and others as listed in the Table 5-5), according to their origin and ethnic identity are tribal peoples. The present constitution of Bangladesh terms them “small ethnic community”, and they are entitled to special attention as “backward section of the people”. In the population and housing census 2011, they are identified as “tribe”. Common peoples also recognize them as culturally distinct group.

150. **Collective attachment to ancestral territories and natural resources:** The tribal peoples in the project districts do not possess any land area as ancestral territories and do not rely on natural resources anymore in the lands they are residing. They are scattered in the mainstream population and gradually being educated to adopt mainstream livelihoods including business, agriculture and services.

151. **Customary cultural, economic, social or political institutions:** The tribal peoples in the project districts have their own culture, religion and traditions unique of the mainstream society. But they do not have any distinct traditional governance system as exist in the Chittagong Hill Tract districts. They are under the mainstream national administrative and political systems.

152. **Use of indigenous language:** These small tribes have their own indigenous language to communicate among themselves. As they are scattered in very small proportion among the mainstream population, they also speak in national Bangla language to communicate with the mainstream population around them. They can read and write in Bangla language and their children are receiving education under the national curriculum.

153. Impact of the individual subprojects on the tribal peoples will be known when the sites for shelters and location for roads will be identified and selected. Experience from the ongoing ECRRP in LGED depicts that no tribal peoples were found in the catchment areas of the more than 300 shelters constructed/improved in the coastal districts and no one has so far been displaced from the subproject sites. Social impact assessment and management plans for subprojects under the ongoing ECRRP reviewed social vulnerability of catchment area population including presence of tribal peoples and did not found any reported discrimination between groups in accessing the shelters at the event of disasters.

## 5.2. Economic Profile of Project Area

154. Bangladesh is a poor and overpopulated country (1015 persons per sq km) and 31.5% of its population is living in poverty. Despite numerous difficulties, Bangladesh economy has grown 5-6% per year since 1996. Although more than half of GDP is generated through the service sector, 45% of the country's population is employed in the agriculture sector with rice as the single-most-important product. The project area largely represents the country in terms of industry, trade and agriculture production. About 52% of the employed population in the project area is engaged in agriculture and half of them own agriculture land. About 50% of the lands in the project area is under grain cultivation. Only 30% of the population has residential structures made of cement concrete materials representing the richer segment of the project area population.

### 5.2.1. Ownership of Farm Land

155. Total land surface in Bangladesh is about 12.31 million hectares (MOL & BARC 2001) and per capita land is only 27% of total land and 17% of cultivable land. In an average 53% of the total households in Bangladesh own farm land and 11% of these farm households are living in the project area. The proportion of farm households is 56% with respect to total households in the project area. By district, farm households are less in Chittagong and Cox's Bazar as the former is a port city and the latter is a tourism district having metropolitan characteristics. Majority of the farm households in the project area are small holders (88%) having farm lands from 0.05 acres to 2.49 acres. A little more than one percent of the farm households (1.16%) are large holders having 7.50 acres or more lands and the rest 11% are medium land holders having land between 2.50 acres to 7.50 acres. Table 5-6 provides details of land ownership in the project area.

**Table 5-6: Ownership of Farm Land in the Project Area**

Districts	Total HHs	Farm Households		Small (0.05-2.49 Acres)	Medium (2.50-7.49 Acres)	Large (7.50+ Acres)
	No.	No.	%	No.	No.	No.
Barisal	423,535	311,537	73.56	280,283	29,524	1,730
Bhola	339,595	219,897	64.75	186,935	29,692	3,270
Patuakhali	312,092	210,535	67.46	164,699	38,758	7,078

Districts	Total HHs	Farm Households		Small (0.05-2.49 Acres)	Medium (2.50-7.49 Acres)	Large (7.50+ Acres)
	No.	No.	%	No.	No.	No.
Pirojpur	231,673	170,786	73.72	148,062	21,168	1,556
Chittagong	870,435	347,341	39.90	315,139	30,067	2,135
Cox's Bazar	326,814	147,764	45.21	132,551	13,817	1,396
Feni	218,316	125,988	57.71	115,814	9,735	439
Lakshmipur	52,149	32,787	62.87	28,625	3,754	408
Noakhali	87,209	47,659	54.65	41,270	5,707	682
Project Area	2,861,818	1,614,294	56.41	1,413,378	182,222	18,694
% of national population	9.97	10.63	-	11.03	8.53	7.98
Percentage of farm households by category in project area				87.55	11.29	1.16
Bangladesh	28,695,763	15,183,183	52.91	12,812,372	2,136,415	234,396
Percentage of farm households by category nationally				84.39	14.07	1.54

Source: BBS, Bangladesh Agriculture Census 2008

### 5.2.2. Land Tenureship and Agri. Labour Households

156. The project area has a total of 2.86 million holdings comprising of 43% of non-farm holdings. Thirty five percent (35%) of the total holdings in the project area are owner holdings, 20% are owner-cum-tenant holdings and about 2% are tenant holdings. Seventeen percent (17%) of the holdings are agriculture labour households. Table 5-7 shows the details of tenureship and agriculture labour households in the project area.

**Table 5-7: Land Tenureship and Agri-labour Households**

Districts	Total holdings	Proportion of households by tenureship and basic occupation			
		Owner Holdings	Owner-cum-Tenant Holdings	Tenant Holdings	Agri. Labour Households
Barisal	423,535	47.95	24.36	1.25	23.06
Bhola	339,595	36.26	26.51	1.98	22.66
Patuakhali	312,092	48.32	18.26	0.88	15.59
Pirojpur	231,673	53.65	19.34	0.72	21.41
Chittagong	870,435	22.65	15.73	1.53	11.39
Cox's Bazar	326,814	23.39	18.73	3.10	17.50
Feni	218,316	36.51	20.80	0.39	14.43
Lakshmipur	52,149	38.43	17.65	6.79	25.48
Noakhali	87,209	35.03	18.38	1.24	24.76
Project Area	2,861,818	35.12	19.70	1.58	17.32

Source: BBS, Bangladesh Agriculture Census 2008

### 5.2.3. Housing Status

157. Housing pattern in Bangladesh is nationally categorized as pucca, semi-pucca, katcha and jhupri. *Pucca* houses are constructed with bricks and mortar and only the richer segment of the population have pucca houses. Jhupri houses are made with low-cost materials like straw, bamboo and others only the poorest and vulnerable section of the population use *jhupri* type structures. Majority of the population in the project area are using *kutcha* structures made of corrugated iron (CI) sheets, wood and bamboo and the middle class people are using semi-*pucca* houses with CI sheet in roof and bricked walls. Around 80% of the population in Barisal, Bhola, Patuakhali, Pirojpur, Lakshmipur and Noakhali are using kutcha houses which are the least in Chittagong (48%). On an average, 8.7% of the project area people use pucca structures and another 10.8% use semi-pucca structures. Users of pucca and semi-pucca houses are higher in Chittagong (25% pucca and 20.6% semi-pucca) and Feni (16.6% pucca and 17.6% semi-pucca). Users of Jhupri houses are the highest in Cox's Bazar – 13.3% and the lowest in Feni– 1.4%. Table 5-8 shows the details of housing status of the project area population.

**Table 5-8: Housing Pattern in the Project**

District	Pucca	Semi-pucca	Kutcha	Jhupri
Barisal	7.3	10.9	80	1.8
Bhola	1.6	7.6	86.3	4.5
Patuakhali	2.6	5.7	86.6	5.1
Pirojpur	4	8	86.2	1.8
Chittagong	25	20.6	48.3	6.1
Cox's Bazar	6.2	11.6	68.9	13.3
Feni	16.6	17.6	64.4	1.4
Lakshmipur	7.6	7.4	82.6	2.4
Noakhali	7.6	7.6	80.6	4.2
Project Area	8.7	10.8	76.0	4.5

Source: BBS, Population and Housing Census 2011

### 5.2.4. Employed Population

158. The project area has a population of 23 million and only 8% of the population is employed in various sectors including agriculture (59%), industry (10%) and service (31%). Employed population is the highest in Cox's Bazar with respect to total district population and the lowest in Pirojpur. About 13% of the population in Cox's Bazar is employed followed by Barisal (9.34%), Bhola (8.65%) and Laxmipur (8.35%). Only 7.56% of the population in Chittagong, 7.47% in Patuakhali, 7.39% in Noakhali, and 5.67% in Feni are employed. Sex distribution in employment as shown in Table5-9 indicates that 50% of the employment women are engaged in Service, 26% in agriculture and 25% in industry.

**Table 5-9: Occupation of Employed Population in Project Area by Male and Female**

District	Employed population (%)	Agriculture (%)			Industry (%)			Service (%)		
		Total	Male	Female	Total	Male	Female	Total	Male	Female

Barisal	9.34	81.37	82.29	60.62	4.37	4.24	7.43	14.26	13.48	31.95
Bhola	8.65	72.31	74.80	36.95	6.40	6.16	9.82	21.29	19.05	53.23
Patuakhali	7.47	75.30	77.73	45.25	5.67	5.48	8.03	19.03	16.79	46.71
Pirojpur	4.06	67.71	70.19	34.02	6.83	6.57	10.48	25.45	23.24	55.50
Chittagong	7.56	34.46	39.26	10.65	18.40	14.59	37.34	47.14	46.16	52.01
Cox's Bazar	12.82	64.56	66.40	40.47	5.40	5.34	6.14	30.04	28.26	53.39
Feni	5.67	47.68	49.43	18.50	9.37	9.00	15.52	42.96	41.57	65.97
Lakshmipur	8.35	73.00	74.51	46.81	6.19	5.99	9.64	20.81	19.50	43.54
Noakhali	7.39	66.50	67.67	49.28	5.52	5.30	8.65	27.99	27.02	42.06
Total PA	8.09	58.72	62.20	25.47	9.70	8.17	24.37	31.58	29.63	50.16

Source: BBS, Population and Housing Census 2011

### 5.2.5. Livestock and Poultry Population

159. Livestock and poultry are the first victims of any disaster events like cyclone in the coastal areas. Other than cattle heads and goats, the poultry birds can hardly be taken to shelters during cyclones. A substantial number of households in the project area have possession of livestock and poultry resources. According to the Agriculture Census in 2008, about 60% of the households reported possession of fowls in 2008 (year of agriculture census), while 39% reported possession of ducks. Only around 13% of the households possessed goats and 32% reported cattle heads in their possession. Fowls and ducks are widely possessed in the project area households but goats are less preferred livestock in the project area. Other than Lakshmipur, possession of goat was only between 8 to 20 percent of households. Cattle heads are possessed by around 30% of the households except in Noakhali (the least 20%) and Patuakhali (the highest 43%). Possession of livestock and poultry is presented in Table 5-10.

**Table 5-10: Households in Project Area with Possession of Livestock and Poultry**

Districts	Number of Households Reporting			
	Cattle	Goat	Fowls	Ducks
Barisal	37.84	15.17	67.35	49.60
Bhola	30.62	19.17	70.81	56.99
Patuakhali	42.82	17.91	66.34	45.52
Pirojpur	29.80	11.47	57.77	38.34
Chittagong	28.36	8.72	46.07	25.04
Cox's Bazar	26.93	13.05	61.35	12.06
Feni	31.17	5.63	69.79	60.70
Lakshmipur	28.60	20.58	72.43	67.60
Noakhali	20.49	8.75	66.72	55.60
Project Area	31.54	12.61	59.98	38.72

Source: BBS, Bangladesh Agriculture Census 2008

### 5.3. Poverty, Gender and Vulnerability

#### 5.3.1. Poverty

160. Poverty is an economic condition in which one is unable to enjoy a minimum standard of living. Poverty refers to various forms of economic, social and psychological deprivation among the people who lack adequate resources, control or access to power for achieving a minimum level of living. Poverty can be earmarked by income level of the households. The concept of absolute poverty is the minimum level of income that is needed for physical survival. Thus, a poverty line can be defined as the minimum level of household income that can be able to purchase a bundle of goods and services to satisfy the basic needs of the household. The Household Income and Expenditure Survey (HIES) 2010 used the Cost of Basic Needs (CBN) method to measure poverty incidence in the country. The HIES 2010 have measured two types of poverty: moderate poverty and extreme poverty. Extreme poverty line is the minimum income to support basic foods and the moderate poverty line is the income to support basic food and non-food expenses.

161. Bangladesh, one of the poorest countries in the world, despite its impressive economic growth and consistent reduction in the rate of poverty, is still struggling with the poor and the extreme poor. There is an effort to combat poverty, both Government of Bangladesh and non-government organizations (NGOs) have been implementing a number of programs, such as, microfinance, vulnerable group development (VGD), and vulnerable group feeding (VGF), employment generation program, and other foods and cash transfers. With poverty interventions and persistent economic growth, poverty in the national level has been reduced over the last 5 years since HIES 2005 from 40% in 2005 to 31.5% in 2010. Table 5-11 indicates that incidence of poverty is higher in Barisal division. Poverty persists in both urban and rural areas in Barisal and Chittagong divisions while urban poverty is much less in Chittagong division. Incidence of extreme poverty is also higher in Barisal division, almost double the Chittagong division. Extreme poverty in the project area is close to the national average due to the higher incidence in the Barisal division. In other areas, the incidence is lower than the national average. Incidence of moderate poverty in the project area is 32.1% again due to higher rate of poverty in the Barisal division.

**Table 5-11: Incidence of Poverty in Project Area**

PA Division	Extreme poverty			Moderate poverty		
	National	Rural	Urban	National	Rural	Urban
Barisal	26.7	27.3	24.2	39.4	39.2	39.9
Chittagong	13.1	16.2	4.0	26.2	31.0	11.8
<b>Bangladesh</b>	<b>17.6</b>	<b>21.1</b>	<b>7.7</b>	<b>31.5</b>	<b>35.2</b>	<b>21.3</b>

Source: BBS HIES 2010

162. In order to understand the state of poverty in the coastal districts, it is necessary to present their wealth rankings (categories of people by wealth). Based on the income level it appears that there are four categories of people in the study area i.e. rich, middle, poor and extreme poor. The category of population was determined through the people's self-assessment exercises. The community in the project areas assesses that poverty is still high and about 55% of the population in Barisal division is poor.

### 5.3.2. Gender Issues

163. The World Bank defines gender as culturally based expectations of the roles and behaviors of males and females. Gender distinguishes the socially constructed from the biologically determined aspects of being male and female. Unlike the biology of sex, gender roles and behaviors can change historically, sometimes relatively quickly, even if aspects of these roles originated in the biological differences between the sexes. Because the religious or cultural traditions that define and justify the distinct roles and expected behaviors of males and females are strongly cherished and socially enforced, change in gender systems often is contested.

164. **Gender discrimination.** Women in Bangladesh are gradually coming forward in national development endeavors getting pace in social sector in terms of equity and empowerment. Despite credible successes in poverty reduction and gender equity, significant gender disparity still exists in income-poverty. First, there is the general incidence of extreme poverty for women headed, women-managed and women-supported households. Second, women workers earn considerably less than men workers. Third, lower average consumption for women is also evident from persistent gender inequality in severe malnutrition, mortality and morbidity. In Bangladesh 20–30 per cent of households are headed by women, and 95 per cent of these households are considered to fall below the poverty line.

165. The women folks are continuously fighting against poverty and patriarchy, along with malnutrition, high maternal mortality rate, lack of access to resources, environmental degradation, lack of access to health, lack of paid employment, discriminatory wage rates, strict gender division of labor, and lack of scope to exercise political rights. Poor women suffer more than men (and than better-off women) from poverty, hunger, malnutrition, economic crises, illiteracy, environmental degradation and disaster-related problems and become victims of violence and political instability. They are also exposed to exploitation and gender-based violence, excluded from decision making and education and deprived of their right to adequate health and nutrition.

166. Women do not enjoy land and property rights, have lower levels of education than men, work in the informal sectors and experience restricted mobility. The continuing fragmentation of holdings is leading to a loss of security for women from the family network and their normative entitlements to social support beyond the family are weakening. Thus women are becoming more vulnerable to extreme poverty and destitution. Women's work possibilities outside the household have reduced as household asset base has been declined. Women's involvement in field wage labor is outweighed by technological displacement of paddy husking, rice milling and other work (Bridge, 1994). Despite state interventions for women empowerment and gender equality, women are lagging behind in case of education, employment and other social development sectors.

167. **Gender status in project area.** Gender relations in the project areas resemble the typical Bangladesh society in terms of empowerment and access to service and resources. Women constitute about 49% of the total population in the project area. Compared to men, women are lagging by 4.7% in literacy achievements and they constitute 9.5% of the total employed population. In the traditional male dominant society, men have easy access to livelihood earnings. However, in recent days, women are being gradually regarded instrumental in family economy and decision-making. The gender gap in education is drawing to a close at an impressive rate at primary and secondary levels. But the gap still



persists at higher secondary and tertiary levels. Women in the impact area villages in general have no access over leadership in village and also in their families. In recent years, some of the women got access to the local leadership and they are now members of Union Parishad and municipalities. Poor women have little control over family resources unless it is women headed or have access to micro-credit.

168. An effort is made here to present an overview of gender situation, especially the status of women in the 9 project districts under ECRRP based on the above-mentioned first and the second indicators. It was found that women rights are respected in approximately 30% cases while lands are titled to women in about 12% cases in the villages under the catchment areas of the sub-projects in the 9 coastal districts under ECRRP.

#### **5.4. Review of Past Similar Experience with LGED**

##### **5.4.1. Social and Resettlement Policy Framework, ECRRP**

169. The social and resettlement policy framework (SRPF) adopted for ECRRP covered three out of 6 components of the project. The three components include (i) Component A: Recovery of Agriculture Sector and Improvement Program, (ii) Component B: Construction and Improvement of Multipurpose Shelters, (iii) Component C: Rehabilitation of Coastal Embankment. The MDSP is of the nature of Component B: Construction and Improvement of Multipurpose Shelters including improvement of shelter connecting roads.

170. The subprojects under component B of ECRRP were construction and improvement of disaster shelters, improvement of shelter connecting roads and construction of killas. As stated in the SRPF, rehabilitation and improvement works of the existing shelters were unlikely to cause any significant adverse social impacts. However, horizontal extension works at the existing shelters, construction of new shelters and the shelter connecting roads may require acquisition of lands anticipating some temporary and permanent disruption to livelihoods. ECRRP's SRPF has been followed to assess social/resettlement impacts of the sub-projects under component B. It offers principles and guidelines to develop appropriate mitigation measures to mitigate negative social impacts. The SRPF complies with the World Bank's Operational Policies OP 4.12 on Involuntary Resettlement. Given the location and nature of works under ECRRP, Bank's OP 4.10 on Indigenous Peoples did not trigger to the project. Resettlement policy framework included in the SRPF reflects the legal framework of the country including the Bangladesh Acquisition and Requisition of Immovable Property Ordinance, 1982 (Ordinance II of 1982).

171. The main objectives of the SRPF are to avoid or minimize, to the extent possible, land acquisition induced hardships and impoverishment, and to mitigate any adverse impacts of land acquisition at the household and the community levels.

##### **5.4.2. Social Management in ECRRP (Component B)**

172. There was no acquisition of lands for implementation of the subprojects so far implemented under component B of the ongoing ECRRP and there is no possibility of acquiring private lands for the remaining subprojects as well. New cyclone shelters were constructed and are also being constructed in

the premises of host educational institutions. However, in a very few cases, additional lands were procured through voluntary donation for improvement of existing shelters and construction of new shelters. Shelter connecting roads are being developed using the lands in the existing village or Union roads. It is recognized that lands in the above-mentioned existing roads are owned by local government. The Union Parishad mobilizes the community and consults the land owners along the village/union roads connecting the shelters to make them understand the needs and benefits of the roads and allow a small strip of land along the selected roads for improvement as per required standard. The School Management committees also facilitate the process and provide necessary support for smooth implementation of the subprojects. The local elected representatives and the school management committees certify social compliance of subprojects for implementation.

173. It is worth mentioning that no dispute was raised by the private owners of lands who might claim them as owners of lands under the shelter connecting roads. Therefore, official letter of no objection in construction of the shelter connecting roads to be issued by Union Parishad is treated and recognized as the valid document based on which construction of the shelter connecting roads can be smoothly implemented.

#### **5.4.3. Experience of Rural Transport Improvement Project**

174. These shelter connecting roads, as per LGED definition, are union roads or village roads. In the World Bank supported Rural Transport Improvement Project (RTIP) implemented by LGED, land acquisition and resettlement issues were considered on Upazila roads only and the roads under the village and the Union roads category were improved using the existing lands only avoiding use of additional private lands. In special critical circumstances, the community members allowed small strip of land for improvement of union and village roads in the quest of higher economic return and social development outcomes. These road lands are largely on khas lands (government lands). Union Parishad is the custodian of these roads and are usually developed and maintained by LGED to meet public demand.

175. As these rural roads are poorly maintained, people encroach from both sides and thereby the available corridors are trimmed narrow over the years. In the improvement of these roads local stakeholders and legal owners are involved at the initiative of the UP and LGED. Owners usually allow small strip of lands from their adjacent parcels when a road proposed for improvement passes through their land for the greater interest of the community and their own benefit through improved communication and increase in value of their residual lands.

#### **5.4.4. Lessons Learnt from Component B, ECRRP**

176. Site selection for new shelters under the ongoing ECRRP was done using PRA approach. Land acquisition and resettlement screening was done at primarily selected sites of new shelters during social impact assessment (SIA). Land acquisition and resettlement screening was done during SIA surveys and consultation meetings at the existing shelters on eve of rehabilitation and improvement works. Results of land acquisition and resettlement screening show that there was no requirement of land acquisition for construction of the new shelters. There was no requirement of land for rehabilitation and improvement works of the existing shelters. New shelters are being constructed in

the lands owned by the host educational institutions. However, in a very negligible cases insignificant amount of lands were procured by the respective educational institutions through voluntary donation from the private owners. Without their spontaneous supports those sites could not have been selected for construction of the new shelters. They surveyors conducted SIA surveys and filled in screening format for land acquisition and resettlement impacts at the sites of new shelters and the existing shelters. During the surveys, the surveyors made meticulous effort to collect evidence and documents in support of legal compliance of current possession of the lands donated for the respective educational institutions (especially in the case of registered non-government primary schools, private schools and Islamic educational institutions) hosting new shelters. They found it very difficult to get deeds and documents of the lands donated for the private educational institutions where new shelters are being constructed.

177. Implementation experience depict that there was no land acquisition for construction of shelter connecting roads. The existing village or Union roads connecting the school cum shelters are being improved upon to ease transportation and communication to the shelters.

178. The students, the teachers and local people are the beneficiaries of the improved shelter connecting roads. They will be able to take shelters easily at the event of disaster. The local people, especially the women and the children will be benefited through using quicker transports to health care facilities. Moreover, the shelter connecting roads will contribute to development in the respective areas including increased marketing facilities for agricultural products, fish, livestock farming, and the like.

## **5.5. Assessment of Social Impacts and Mitigation**

### **5.5.2. Project Benefits**

179. The project aims to reduce the loss of life and livestock during natural disasters; and increasing the population covered by accessible multi-purpose shelters. Project benefits for multipurpose disaster shelters include (i) ensuring safe sheltering of the project beneficiaries at the event of any disasters including cyclone, (ii) provide congenial learning environment and sufficient space in the classrooms at multipurpose shelters, (iii) overall improved schooling facilities and environment to be ensured at multipurpose disaster shelters conducive to children's learning, and (iv) affected people also will be able to bring their cattle to keep at safe livestock shelters at the event of any disasters. Newer schools with better access and facilities will promote education enrollment. New roads will support a better connected transportation and emergency network. This will provide more involvement opportunities for income generating activities, increasing livelihood.

180. The proposed project would have considerable spill-over (wider economic) effects on the coastal region. Cyclone shelters are constructed for multipurpose use. A 2009 CEGIS field investigation on normal time use of shelters shows that, among the 2,583 shelters 82% was used as education centers, 8 % as offices, 1% as community centers, 1% as health centers and 6% do not have any normal time use. This provides valuable infrastructure upgrades to rural regions. Newer schools with better access and facilities will promote education enrollment. New roads will support a better connected transportation and emergency network. This will provide more involvement opportunities for income generating activities, increasing livelihood.

### 5.5.3. Social Concern and Risks

181. Social concerns and risks may be arisen in some insignificant cases include (i) loss of agricultural land due to land acquisition, (ii) land acquisition (including pond acquisition) may cause loss of income, (iii) loss of livelihoods, (iv) harassment in collecting deeds and documents of lands to be acquired, (v) loss of land through voluntary donation or direct selling, (vi) interruption in schooling, (vii) disruption in public transportation and communication, (viii) environmental adverse effect, etc.

### 5.5.4. Involuntary Resettlement

182. Use of lands and premises of existing schools, colleges and madrashas as shelters and relief shelters is an approach serving versatile use in Bangladesh. Usually, these educational institutions are centrally located in high elevated compounds having facilities of water, sanitation and accommodation for people during an emergency to possible extent. Therefore, provision of additional buildings for schools which are extensively used as shelters and relief shelters is an added advantage for education of the children and for the sheltering purposes.

183. Lands in the premises of these educational institutions mostly owned by the government and where unavailable, other public lands will be used as much as feasible. In only critical cases, private lands can be obtained for sites through voluntary donation, direct purchase (willing seller and buyer basis), exchange or contribution against compensation by sponsoring institutions. With this approach, involuntary resettlement for implementation of the sub-projects under MDSP is highly unlikely. However, since disaster shelters are basic infrastructure in the disaster prone coastal areas, unavailability of land in the selected sponsoring educational and social institutions or through voluntary donation should not be an excuse to drop a vulnerable area without a shelter. A feasible option in compliance with Bank OP 4.12, will be resorted to as the last option at this extreme position. In addition, there may be physical obstructions in available lands use of which may lead to displacement of people.

### 5.5.5. Impact of Tribal peoples

184. It has already been presented earlier in Table 5-5 that Chakma, Garo, Tripura, Khumi, Rakhaine, Malpahari, Dalu, Marma, Tanchaynga, and Barmonare are the major tribal peoples living in the project districts. Tribal concentration is higher in Chittagong, Cox's Bazar and Patuakhali compared to the other project districts. These peoples have their own language and culture but are scattered within the mainstream population. Impact of the individual subprojects on the tribal peoples will be known when the sites for shelters and location for roads will be identified and selected. However, LGED will select to avoid a subproject site posing negative impacts to the tribal peoples in the project area and find alternative site in the same vicinity and catchment area so that the tribal peoples are not excluded.

### 5.5.6. Other Impacts During Construction

185. The project, for clearing sites for construction of new multipurpose disaster shelters may require demolishing a very few number of existing buildings in the premises of government primary schools/registered non-government primary schools/*madrashas*/high schools/colleges which will be finally selected for construction of new. The same thing may happen in case of some existing shelters.

Where the sites are located within a congested area with residential setup, high rise building, schools, and mosques, stacking of debris and demolition activity may affect the residents temporarily.

186. In addition to debris nuisance, increased number of non-local peoples on site during construction may pose a risk to public health and to some extent spread of STDs including HIV/AIDS. Social and environmental management plans will be required for public participation and to mitigate non-safeguard social impacts including grievances management during construction.

## **6. CONSULTATION AND PARTICIPATION**

### **6.1. Consultation and Participation**

187. Consultation and participation is a two way process to share project design and ensure participation of the beneficiaries and likely affected persons in the project process. The ESMF requires that adequate consultation with all the potential beneficiaries of the selected shelters have to be carried out and outcomes of the consultation process will be fed into the scheme design of the shelters for improvement. In compliance of the requirements, a total of 36 persons including 5 women were consulted during the site survey. Fourteen persons to twenty two persons participated in each consultation meeting during the site survey of the two proposed shelters for construction of multipurpose disaster shelters. During the consultation meetings, social and environmental issues and aspect were disclosed. The participants were encouraged to put up whatever concerns they anticipated about construction of the proposed shelters. They were also facilitated to provide their suggestions for consideration in the project design. Annex-2 shows the photographs and list of individuals who participated in the FGDs.

#### **6.1.1. Feedback from Beneficiaries**

188. The FGD results confirmed that presence of improved and new cyclone shelters have increased the sense of security of the communities, particularly that various motivation activities are undertaken by the concerned agencies, local government, disaster management members and volunteers. In Fact, these shelters have actually been used during recent Cyclone Mohashen.

189. As these facilities are being used by teachers and students as their school facilities, with the improvement and extension of old shelters and construction of new shelters, it has been reported that the number of students increased by about 20%.

190. More than 75% of the FGD participants indicated they were aware of existing designated cyclone shelters in the village or a nearby village. Of them 50% indicated knowing of new shelters to be constructed and 80% of existing old cyclone shelters. Half the participants of those aware of the facility expressed that the number of these cyclone shelters is insufficient. The local officials, teachers, students, local government members and NGO were reported to be the main source of information on the existing designated cyclone shelters in their area.

191. Two third of those who are aware of improvement undertaken on old shelters cited the following improvements: provision of emergency water, hygienic facilities and construction of access road (66%)

192. Majority (75%) of the informed participants of the newly constructed or rehabilitated cyclone shelters said they are satisfied with its present condition. The satisfaction was because of the following reasons: accessibility (75%), adequate facilities (80%), adequate capacity (64%) and safety (91%).

193. Despite their awareness of existing shelters, more than half of the total participants reports that they stay in their houses in times of cyclone and flooding mostly because of onrush to the shelters and other social problems.

#### **6.1.2. Issues and Concerns**

194. The FGD participants and beneficiaries presented a number of suggestions and recommendations for consideration as follows:

- Construction of shelter and killas in the remote char areas for shelters of human being as well livestock should be made since there is acute shortage of shelters in these areas. More shelters with increased capacities and accommodation for livestock should be constructed in remote places.
- There should be access facilities to these shelters such as connecting roads, which should be above flood level and good drainage and supply/source of sweet water for drinking and other use, lighting facilities etc. Facilities should be made available in the hour of need and people should be well informed to local disaster management during disaster forecast.
- Selection of sites should have the consensus of the people. Some design and construction issues need to be addressed to improve the ability of infrastructure to provide greater protection. Some of the participants apprehended the use of the facilities by the influential persons
- Revisions are suggested and accepted in the field on the design options but the changes are not properly monitored and reflected in revised design creating confusions and delays.
- Drinking water scarcity is a major concern in some areas. Water is saline and some shallow tube well water is contaminated with arsenic. People have to fetch water from longer distances and difficult places. Rainwater harvesting facilities and filtering facilities like Pond Sand Filters (PSF) are inadequate.

### **6.1.3. Consultation Output and Results**

195. Participants in the community meetings at Companiganj and Laxmipur were attentive to the discussions and raised their concerns on natural disasters in their area as well as provided suggestions in their understanding and experience to address the problems related to the events of disaster.

### **6.1.4. Concerns raised by the Participants**

196. Following are the concerns raised by the beneficiaries participated in the consultation meetings at the 2 proposed shelter sites selected for construction of multipurpose disaster shelters:

- There are no cyclone shelter in their localities (in the catchment areas of the proposed shelters at Shakchar Jabbar Master Community Primary School and Char Parbati Rahimia GPS),
- Cyclones are more devastating when hit at night,
- Lack of lighting during cyclone especially at night,
- Excessive river bank erosion had profound adverse impact on displaced people under Char Parbati Ward at Companiganj Upazila of Noakhali district,
- Lack of the readymade and dry foods,
- Lack of security for assets left at their houses,
- Inaccurate forecast and rumor of cyclones,
- Quality of construction works may not be up to the standard,
- Inadequate toilets located on the ground,
- Schooling of children (about 275 students of Char Parbati GPS) during construction works.

### **6.1.5. Suggestions from Participants**

197. A forecast system has to be developed to inform the people about the exact time of occurrence, scale of devastation, and duration of cyclone well ahead of the actual hit. This will eliminate confusion among the population at risk and thereby reduce damages and casualties. Capacity of the existing shelters around the area has to be expanded. Besides, more new shelters have to be constructed for the increased access to multipurpose shelters. The proposed cyclone shelters should have solar energy systems so that there is light at the event of disasters at night. The other suggestions made by the participants are as follows:

- Accommodation capacities of the proposed shelters should be sufficient for the vulnerable people living in the catchment areas,
- Approach roads from road to the shelters should be included,
- Construction works should be started immediately,
- Construction works should be scheduled before and after school hour or during holidays,
- Toilets should be constructed on the upper floor of the shelters with water supply facilities,
- The readymade and dry foods and clothes should be arranged,
- Social security should be given emphasis, and
- School authorities should be involved in construction management to ensure quality of work.

### **6.1.6. Social Linkage of Project Design**

198. The engineering design should be done following consultation with the concerned stakeholders (Head of school managing committee, Head Teacher of the concerned school, UP Ward Member and UP Chairman). More specifically, the engineering design will consider the following issues in compliance with the concerns raised and suggestions provided by the community:

- Solar Energy system will be included in the project bill of quantities (BoQ).
- The toilets will be constructed in the upper floor with adequate water supply facility, where the existing toilets are in the ground at a remote location.
- Ground floors will be raised with boundary railings.
- Class activities and safety to students of the multipurpose shelters during construction work will be ensured adopting the following options:
  - Construction works will be extended during nights and holidays.
  - When construction will be done in the upper floor, the ground floor will be used for class activities.
  - Duration of construction work will be extended to accommodate time for avoiding class hours.
- Approach roads to the shelters will be constructed. The environmental management plan (EMP) of the project will include environmental safety during construction especially for the students attending classes



# **PART C-ENVIRONMENTAL & SOCIAL ASSESSMENT**

## **PROCEDURE**

### **7. ENVIRONMENTAL ASSESSMENT PROCEDURE**

#### **7.1. Introduction**

199. The major activities to be carried out for IEE/EA (including EMP) include: (i) Environment Screening (identification of possible impacts) (ii) Description of Surrounding Environment (establishment of “baseline environment” against which impacts of the proposed sub-project would be evaluated); (iii) analysis of alternatives; (iv) identification of major sub-project activities during both construction and operational phases; (v) assessment, prediction and evaluation of impacts of major project activities on the baseline environment; (vi) carrying out public consultations; (vii) preparation of environmental code of practice (ECoP); and (viii) identification of mitigation measures and preparation of impact specific environmental management plans (EMP) including monitoring requirements. The EMF presents detail guidelines for carrying out each of these major activities.

#### **7.2. Environmental Screening**

200. All the sub-projects to be funded under MDSP will be subject to an environmental screening in order to prevent execution of projects with significant negative environmental impacts. An environmental impact is an estimate or judgment of the significance and value of environmental effects on physical, biological, social or economic environment. Low, medium and high representing impact or level of importance associated with a factor. The impact level depends on duration, reversibility, magnitude, benefit, significance etc.

201. Environmental screening is a part of the IEE. The purpose of the environmental screening is to get relevant concerns addressed early on before further design of a project and to ensure that actions to mitigate environmental impacts or enhance environmental opportunities are budgeted for. The field Sub-Assistant Engineer of LGED with the coordination of Resident Engineer of DS consultant will be responsible for carrying out environmental screening. The environmental screening would involve: (i) reconnaissance of the sub-project area and its surroundings; (ii) identification of the major sub-project activities; and (iii) preliminary assessment of the impacts of these activities on the ecological, physico-chemical and socio-economic environment of the sub-project surrounding areas.

202. The participation and consultation with local communities are important identifying the potential impacts of the project interventions. A sample Screening checklists are shown in Annex-3.

### **7.3. Description of the Environment**

203. For proper environmental assessment (as a part of IEE and EIA), it is very important to adequately define the “environmental baseline” against which environmental impacts of a particular sub-project would be subsequently evaluated. The characteristics of “environmental baseline” would depend on:

- Nature of the sub-project location,
- Nature/ extent of a sub-project and its likely impact,
- Level of environmental assessment (e.g., screening versus full scale EIA)

204. For example, felling of vegetation/tree, water quality, ambient air quality and noise level are important parameters for describing baseline scenario for the sub-projects construction under MDSP, because these parameters are likely to be impacted by the project works.

205. The base line description collection should take into account the existing and proposed developments in the area. Based on the field visit baseline data needs to be collected from secondary and primary sources to describe the baseline conditions. Environmental baseline should include collection and interpretation of information on the status and trends of the environment that are likely to be affected by the development action.

206. The base line description collection should take into account the existing socio-economic condition, physical environment of selected indicators and proposed developments in the area so that cumulative impacts can be assessed. On the field visit baseline data needs to be collected from secondary sources (consult FRE) and public consultation (FGD) to describe baseline condition. The following sections provide guideline on identification of important features/parameters and collection of sub-project specific environmental baseline data.

207. **Physical Environment**-The description should include information on

- Climate: Temperature, rainfall, humidity wind speed and direction, air quality etc.
- Topography and land/soil type
- Noise and dust
- Flooding and drainage pattern: If and when the area is flooded by normal flood and any river is around the project that may represent a risk of flooding.

- Protected area, physical and cultural Heritage

208. Information should be gathered from both published sources as well as public consultation. Mention if the sub-project falls under protected, or is in heritage area

209. **Water Quality and Quantity**-Baseline data of the intake water quality is necessary. In addition, given the competing water usage of the river water, availability of enough water during the lean season needs to be assessed as part of the baseline data collection. Arsenic contamination has been reported in the ground water exploited from the shallow layers by pump wells and salinity is a common phenomenon in surface water especially in river water.

210. **Biological/Ecological Resources**-Fisheries: There may be fishing in the river stretch adjacent to the project which may get disrupted by the intake and discharge of the construction disposals. Hence the nature and scale of fisheries around the project area will need to be assessed.

211. **Aquatic and Terrestrial Biology (Flora and Fauna)**: Any flora and fauna of importance that include terrestrial flora (forests) especially any endangered species, sensitive habitats and species of commercial importance, wetland flora, terrestrial fauna (sensitive habitat/Wildlife and coastal resources).

212. **Trees**: Number and species of existing trees and plants in the proposed shelter sites must be reported. The felling of tree/s because of the shelter construction must be reported mentioning the number and species.

213. **Flooding and Drainage**-If any river is around the project this may represent a risk of flooding, historical hydrological data needs to be reviewed to ensure that the project is flood proofed. The 50 year project flood level should ideally be taken as the plinth level when leveling/filling the site. Drainage situation in and around the shelter site must be described with connection to outfall or river system.

214. **Socio-economic Condition**-This would include beneficiary population, loss of assets during the Sidr 2007, housing status, literacy and education, distribution of income by occupation, annual income and gender issues. This is to be compiled from the SRIA reports and partly from FGD with summary of discussions.

215. **Economic Development**-Information to be gathered should include infrastructure facilities like water supply, power source etc., transportation such as road type, net-work, accessibility etc., industries including cottage industries and tourism Facilities

216. **Agricultural Development**-Briefly describes the major crops grown, crop type, cropping intensity and land use pattern.

#### **7.4. Analysis of Alternatives**

217. The primary objective of the “analysis of alternatives” is to identify the location/design/technology for a particular sub-project that would generate the least adverse impact, and maximize the positive impacts.

218. Project alternative is applicable when and if the impacts of environmental components and issues have significant changes to the area and also the capacity of adaptation to the changes is widely

varied with selection of technology and materials in construction or rehabilitation of shelters and connecting roads. In this case there is no such situation. First alternative is not to take project to construct shelters or zero option. In zero option, the situation will only worsen as there will be no intervention to save and protect the life and living from disasters and the after effects of the disasters. Hence this option is not considered.

219. The second alternative is construction or rehabilitation of the shelters in education institutes mostly in existing primary schools. This implies that the shelter will be education institution based. However; certain criteria to select the sites for the cyclone shelters with due processes and design including environmental parameters are to be followed to prioritize the selection by:

- Series of Consultation Meetings to be organized between Local Government Bodies (UP/WC), elites and local stakeholders of the area to select the location of shelters.
- Necessary surveys on the parameters such as physical location, socio-economic condition, communication, environmental aspects etc. with public consultations to solicit wisdom and experience and reflect the aspirations of people.

220. After selection of the school there will be 5 options available in the design and size of the shelters depending on the available area and design of the existing school. These options were considered in ECRRP and will be adopted in MDSP. The design options are shown in Annex-4.

### **7.5. Major Sub-Project Activities**

221. In order to assess environmental impacts, it is very important to identify the major sub-project activities during both construction and operational phases. The identified major activities during disaster shelter construction are given below.

- Selection of site- The new disaster shelter/school building with access road will be constructed at the same premises of the existing schools; those will be identified during implementation stage. The construction does not require any land acquisition.
- Mobilization of material and equipment and establishment of labor camp.
- Excavation for foundation work
- Dewatering
- Reinforcement, concrete casting of footing or pile cap for Piling work
- Form work, reinforcement, concrete casting for superstructure including beam, columns and slab.
- Rehabilitation / construction of structures
- Finishing work includes partition wall, painting, electrical works etc.
- Site clearing and managing all construction waste

### **7.6. Assessment and Prediction of Impacts**

222. After identification of the sub-project activities, the next step in the IEE/EIA involves assessment/ prediction of the impacts of these activities on the baseline environment. Construction of multi-purpose shelter involves environmental issues in different phases of the project. Based on the construction activities the following environmental issues will be raised generally.

- Surface Water Pollution
- Ground Water Pollution

- Air Pollution
- Soil Erosion
- Noise Pollution
- Disruption of natural systems
- Damage of Trees and Vegetation

223. The impacts can be sub divided in pre-construction, construction and operation & maintenance phase. The following sections will describe environmental impacts in different phases due to the subproject activities.

#### 7.6.2. Pre-Construction Phase

224. **Loss of Land-** The construction does not require any land acquisition or trigger loss of any agricultural land as these will be constructed on the existing institutes. During design phase it should be assessed and alternate options must be explored to identify suitable land, which has less impact on agricultural production.

225. **Setting up of Labour Camps:** Improper site selection for labour camp may affect environment. Detail is described in the ECoP in Annex 5.

#### 7.6.3. Construction Phase

226. **Surface Water Pollution-**Nearby water body may be polluted due to disposal of construction wastes or wastes from labor camps of the building project.

227. **Ground Water Pollution-**Septic tank and soak-well deepened up to underground water table may act as media to pollute water, which may be cause of waterborne disease.

228. **Air Pollution-**Air pollution may be triggered from a wide range of construction activities, including movement of vehicles, operation of construction equipment and generators.

229. **Drainage congestion-**Temporary drainage congestion often results from obstruction to natural flow of drainage water due to the storage of materials, piled up excavated material/soil, and temporary embankments constructed to keep the work area dry. Improper dumping shall impact natural drainage courses.

230. **Soil Erosion-**Soil erosion increases in the construction site because of indiscriminate removal of grasses and turf from the site and dumping of carried earth on the site without proper compaction layer by layer.

231. **Noise Pollution and increased Vehicular traffic-**Could generate from Heavy machineries used during construction, especially during pile driving works and also from movement of vehicles, operation of construction equipment and generators.

232. **Disruption of natural systems-** Construction of shelters disrupts the existing ecology and natural system of the locality. Wild animals like foxes, jackals, snakes, frogs, etc. have to leave the area.

233. **Trees and Vegetation-**Tree felling may be required to clear the site for building construction. Live vegetation will be disrupted. Water bodies are sometimes filled, which causes destruction of plants grown under water.

234. **Ecological impacts**-Based on primary assessment of the nature and scale of the proposed sub-projects and assessment of sub-project locations (based on field visits), it appears that ecological impacts are not likely to be significant for most of the proposed sub-projects. However, the ecological impact should focus on:

- (a) Impact on flora (aquatic and terrestrial);
- (b) Impact on fauna (aquatic and terrestrial) including fish;

235. **Health and Safety of Workers and Students**- Health and safety of workers and students must be taken into account while construction activities are on. The contractor must provide safety gears like helmets, hand gloves, eye protectors while welding to the workers. A first aid box must always be available at the site. The safety of the students from dust, noise and staking of rod and sands must be ensured by the contractors following environmental code of practices and management.

236. **Environmental Pollution From Solid/ Construction Waste**-In many sub-projects, considerable construction debris (e.g., demolition of existing structures) is likely to be generated from different sub-project activities. Solid wastes will also be generated from labor sheds, particularly for labor-intensive sub-projects. Improper management of construction debris and solid waste could cause blockage of drainage line/ path and environmental pollution.

237. **Socio-Economic Impacts**- Possible socio-economic impacts from the sub-project activities may include: loss of income and displacement, traffic congestion, impact on top soil, health and safety, impact on archaeological/historical sites/physical and cultural resources, and employment and commercial activities.

#### 7.6.4. Operation and Maintenance Phase

238. **Water Logging**-Due to improper planning and construction storm water drainage congestion / water logging may be created. This may affect commercial activities in the market and cause potential risk to community health. Detrimental effect may cause on the paved/road surfaces in the market areas.

239. **Additional Burden on Utilities**-Construction of new cyclone shelters especially if it is multi-storied, creates additional burden on the existing system of utilities like water supply, sewerage, electricity, gas, telephone and road network etc.

240. **Operation and Maintenance of Environmental Utilities**-Lack of O&M of the environmental utilities is very nuisance to environment and worsens the environment if they are not there at all. Regular cleaning person of the utilities (sweepers) should be appointed.

241. **Excessive Resource Use**-Construction of shelters calls for using land, material (like scarce wood from natural forests) and water resources, which may create crisis for other intended users.

242. **Excessive Use of Energy**- Implementation of cyclone shelter projects creates facility for more people and consequently increases demand for electricity and other form of energy etc.

243. **Health and Well-being of Users**-Sometimes shelters are not designed properly to ensure healthy and comfortable conditions for the dwellers, which create conditions worse than the slums inside the

multistoried buildings. The proper drainage slopes, and entrance and exit from the shelter must be properly designed and ensured.

### **7.7. Public Consultation**

244. The location of the disaster shelter will be identified by the LGED through consultation with the community and the targeted beneficiaries. After selection of a subproject, the community level environmental screening will be an integral part of the sub-project planning. The community meeting has been suggested to discuss the subproject, identify the community priority and identify the scope of work. Thus Consultation is a continuous process by which opinion from public is sought on matters affecting them. Public consultation is generally a continuous process aimed at engaging the stakeholder efforts throughout the planning, design, construction, and operation a project. The objectives of consultation and access to information are to generate public awareness by providing information about a sub-project to all stakeholders, particularly the sub-projects affected persons (PAPs) in a timely manner, and to provide opportunity to the stakeholders to voice their opinions and concerns on different aspects of the project. The opinions and suggestions of the stakeholders would assist in taking appropriate decisions for effective environmental management of the sub-projects. It would help facilitate and streamline decision making whilst fostering an atmosphere of understanding among individuals, groups and organizations, who could affect or be affected by the sub-projects. As a part of IEE/EIA, an effective public consultation and access to information plan (PCAIP) needs to be developed. The specific objectives of PC are:

- To keep stakeholders informed about the sub-projects at different stages of implementation,
- To address the environmental and social concerns/ impacts, and device mitigation measures taking into account the opinion/ suggestions of the stakeholders,
- To generate and document broad community support for the sub-projects,
- To improve communications among interested parties, and
- To establish formal complaint submittal / resolution mechanisms.
- To discuss about cyclone, flood, tidal surge and storm occurred over the years, document their problems and issues related to the above-mentioned disasters,
- To describe their practical experience of tackling natural disasters, solicit their suggestions and perspectives based on their local knowledge about disaster and coping strategies,
- To document their priorities about multipurpose shelters (location of multipurpose shelters and number of persons can be accommodated at the shelters) to be constructed,

#### **7.7.2. Consultation Process**

245. During the sub- project preparation stage extensive consultation should be arranged during the conduct of the IEE/EIA surveys. Such consultations will continue to be ensured during further design and implementation stage of the project. These will be undertaken at a minimum, at selection of the sub-projects, during environmental screening, and assessment, if undertaken, and while formulating the EMPs. A comprehensive framework for the participatory consultation including an effective feedback mechanism and information disclosure should be developed and incorporated for implementation during the entire duration of the project.

246. A critical element in planning a participation and consultation program is associated with the selection of participation techniques to meet desired objectives. Considering the importance of effective participation and consultation in a wide spread project area along with the time and resource constraints in the present project, the following participation techniques needs to be followed:

- Information dissemination and information sharing techniques should be used to inform the stakeholders regarding the action being taken in a program area through personal communication to make them aware about the project as well as to incorporate users input at different stages of the project.
- Information gathering techniques to gather quantitative and qualitative information about the individual schemes through questionnaires survey.
- Focused Group Discussion (FGDs) should be conducted covering different components of the project to increase local awareness about the forthcoming project as well as to incorporate their views, needs, priorities considering different positive and negative impact of the project.
- Key Informant surveys should be carried out among the knowledgeable and elderly people of the project area to incorporate their views and suggestions from their long experiences and knowledge.
- Hot Spot Consultation should be conducted in problematic locations of the schemes with participation of knowledgeable and affected people, local elite, public representatives, officials and NGO people to mitigate adverse impact considering their views suggestions from their practical experiences as per local needs and demands.
- Participatory workshops should be organized with the participation of different types of representative stakeholders.

247. The focus group discussions (FGDs) must have representations from the cross-sections of the stake-holders of various professions and categories like agriculture, fishery, students, teachers, business persons, poorer section of the community, housewives, women groups, vulnerable groups, NGOs/CBOs, LGED, local government, development organizations, development partners. The number of FGD participants should range from 15 to 30.

248. The Environmental Specialist will monitor and contact the Coordinators as and when necessary. The experts will conduct the FGD in consultation and coordination with the designated stakeholders and Engineers. The FGD Experts will interact and coordinate with the Upazila Engineer, Field Resident Engineer (FRE) and other field staff regarding the schedule, field work, visit to the sites and public consultation meetings.

### **7.7.3. Findings of the Consultation**

249. Consultation is a two way process to and ensure participation of the concerned stakeholders (mentioned earlier) during the planning stages when the technical designs are being developed and also share project design among the primary beneficiaries and likely affected persons. Different techniques and methods (e.g., public meetings, informal group discussions, In-depth Interviews, conversation, etc.) will be used with the concerned stakeholders following the consultation guidelines to make consultation process functional and effective.

250. Consultation outcomes include – (i) the concerned stakeholders are well informed about the project design, (ii) perception and knowledge of the stakeholders about various disasters are collected,



(iii) their problems and issues documented, (iv) local folk strategies of tackling of disasters by the affected people are revealed, (v) a kind of ownership feelings created among the participants because of consideration towards their suggestions and perspectives for improvement of project design, and (vi) commitment, skills and capacities of shelter management committees created, developed and enhanced for effective and efficient utilization of the multipurpose shelters.

251. Results of assessments are decisive elements in selection of the design, size and location of the multipurpose disaster shelters. (Table-7-1)

**Table 7-1: Summary of community consultation**

<b>Description/ Particulars</b>	<b>Details</b>	<b>Areas of the key insights</b>
Perception and knowledge on disasters: problems and issues	Contemporary disasters (Sidr and Alia) will be described, years of occurrences and devastation of disasters, magnitudes of damages and losses	Impacts of disasters
Tackling natural disasters	Documentation of folk and local strategies adopted for tackling cyclone Sidr and Aila	Tackling Sidr and Aila and resilience of the affected people
Deserving multipurpose shelters	Locations of shelters, population in the villages under catchment areas, vulnerable population to disasters, current road networks/accessibilities, requirement of construction/improvement of shelter connecting roads, social and environmental impacts (positive and negative) and social and environmental safeguard compliance;  To help manage public expectations concerning the impact of a project and its expected benefits,	Effective shelters
Role of the School Management Committee (SMC) and the Union Parishad (UP)	The participants of the meetings and group discussants will be informed about importance of active participation of the SMC and the UP. The role of UP is very vital as they steer the land clearance process especially for the improvement of connecting roads in consultation with affected persons and certificate of approval by UP is a valid document. The SMC will coordinate with UP to ensure effective use of the shelters; and will ensure solar panel and systems are functional, water and sanitation facilities are useable, etc.	Integrity and cooperation among the members of both the SMCs and the UPs will sustain effective sheltering at the multipurpose shelters.

252. **Recommendations:** Recommendations are made based on discussed matters including problems, issues, concerns and suggestions which will be provided by the participants of community consultation meetings. Presumably the following can be the potential recommendations:

- Locations of the sites of the sub-projects should be accessible considering expectations and feedbacks of the participants of community consultation meetings,
- Approach roads from road to shelters should be included in the improvement work,
- Schooling of the students should be uninterrupted through alternative arrangement during civil works (new construction and repair and extension works),

- Toilets to be constructed for the females and the males considering gender aspect and sensitivity,
- An enabling environment should be created among the members of the School Management Committee, the Union Parishad and the local administration for a particular shelter for effective utilization of the shelter at the event of any disaster,
- An effective and timely disaster forecasting system should be developed based on discussions of the contemporary disaster, shortcoming in evacuation alarming and sheltering of the affected persons at shelters or at any safe buildings and what can be more effective evacuation and sheltering of the potential affected person in any future disaster

## **8. SOCIAL ASSESSMENT PROCEDURE**

### **8.1. Social Screening and Impact Assessment**

253. LGED will screen each subproject site (shelter or road) to identify potential safeguards compliance issues and social impacts, in order to determine applicability of the OP 4.12 on involuntary resettlement and OP 4.10 on indigenous peoples. Where adverse impacts cannot be avoided entirely, LGED will select, design and implement the subproject in accordance with the following guidelines:

#### **8.1.1. Exclusion Criteria**

254. To ensure that the project meets its overall objectives, and that the national legal as well as Bank's safeguard requirements are met, the following will constitute criteria for the exclusion of subproject sites from project finance:

- Require involuntary acquisition of land and displacement of tribal peoples;
- Affect mosques, temples, graveyards, cremation grounds, and other places/objects that are of religious and cultural significance;
- May significantly restrict access to common property resources and livelihood activities of groups and communities;
- Threatens cultural/traditional way of life of tribal peoples, restrict their access to common property resources (forests, water bodies, etc.) and livelihood activities, and affect their places/objects of cultural and religious significance (places of worship, ancestral burial grounds, etc.).
- Community agreement cannot be reached on sites and land is not available through methods adopted in the SMF.

#### **8.1.2. Social Screening**

255. Once a site for new shelter or horizontal extension of an existing shelter or an existing road section for development as shelter connecting road (subproject) is primarily selected, social screening will be carried out for exclusion criteria and assessing feasibility of the sites. The social screening will provide a rapid assessment of the subproject characteristics, its beneficiaries, the socioeconomic dimensions of the area, and its potential impacts and risks including impact on tribal peoples (a format for social screening is appended at Annex-17). It will also identify potential need for additional lands and the methods of obtaining those lands. Results of the social screening will determine whether or not an individual subproject site qualifies for project financing and if detailed Social Impact Assessment (SIA) is required. A social screening report will be prepared with all findings and recommendations for further process. Subprojects without social safeguard compliance issues will be considered for detailed preparation and a Social Management Plan (SMP) will be prepared for management of social issues during subproject implementation.

#### **Contents of SMP**

- Project background followed by a brief description of the subprojects packaged for a construction contract;
- Description of subproject area, beneficiary profile, disaster vulnerability of the catchment area, community mix and gender analysis;
- An account of the process followed for site selection and obtaining lands for infrastructure construction for shelter or connecting roads demonstrated with evidences;
- An account of consultations with the beneficiary communities about their concerns, options for mitigation measures and implementation procedure;
- Social screening and safeguard compliance issues;
- Inclusion, participation and grievance redress;
- Social management budget; and
- Monitoring and evaluation.

#### **8.1.3. Social Impact Assessment**

256. SIA will be carried out for proposed subprojects when social screening will identify potential social safeguard issues. The principal opportunity of the SIA involves identifying viable alternatives; identifying potential social impacts, including direct or indirect; permanent or temporary; physical or economic, assessing their significance; designing least-cost mitigation measures and monitoring requirements; formulating institutional arrangements; and ensuring meaningful public consultation and information disclosure procedures. Once social impacts are noted, census of affected persons and assets will be conducted following the site boundary/alignment and where applicable resettlement action plan (RAP) in compliance with the SMF guidelines will be prepared. The affected persons and their communities will be consulted during the census survey to understand the risks and options for devising mitigation of social impacts. To ensure that social concerns are adequately addressed, specific social analyses will include: (i) Socio-economic analysis; (ii) Stakeholder analysis and (iii) Involuntary resettlement (including temporary or permanent relocation and compensation for loss of assets). The assessment will identify and estimate impacts, risks and opportunities and suggest measures to avoiding or minimizing, mitigating and managing, and compensating adverse social impacts.

257. Subprojects where land will be taken through involuntary acquisition, land acquisition process will be initiated by LGED well ahead of time so that assessment of social impacts and risks can be done for preparation and approval of RAPs before award of civil works contract and implementation of the same before displacement of people.

258. The SIA will utilize a well-planned and all-inclusive communication and consultation strategy and survey methodology to lay out a detailed socioeconomic survey covering the prevailing status of income, employment, education, age, skills and other socioeconomic aspects along with cultural and community aspects in the areas. The following methodology may be adopted.

- (a) The SIA will be carried out for each subproject with social safeguards compliance issues in accordance with the civil works time table.
- (b) Community/stakeholder consultations at locations with habitations and documentation of such consultation.
- (c) Focus group discussions with beneficiaries, key affected persons and their community.
- (d) Census and socioeconomic survey among the project affected households.
- (e) Assimilation and analysis of data and information to address key issues following SMF.
- (f) The information gathered shall be recorded and computerized, and photograph will be used to document existing structures and land holding and other impacts in the corridor of impact.
- (g) Update the final alignment/site on the Mauza maps and finalize the land acquisition plans.
- (h) All data will be disaggregated by gender, age and ethnicity where necessary. A gender analysis will also be undertaken.

259. Deputy Commissioner at respective districts, where a site will involve land acquisition, will process land acquisition on behalf of LGED under the provision of the Ordinance II of 1982 and make payment of compensation under law. However, LGED will make additional payment where needed to ensure replacement cost of land and other property acquired for any site following the provision of RAP prepared in compliance with this SMF. Inclusion and participation will be included with the SMP where social screening and SIA will identify tribal peoples among the beneficiaries.

## **PART D- GUIDELINES FOR ENVIRONMENTAL & SOCIAL MANAGEMENT PLANNING**

## **9. PROJECT EMBEDDED ENVIRONMENTAL CONSIDERATIONS**

### **9.1. Introduction**

260. The project will ensure that environmental considerations are given sufficient attention, weight and influence over design decisions to ensure due diligence to comply the GoB and World Bank requirement policy as stated under Chapter 3 and Article 3.3.

### **9.2. In Design**

261. Environmental considerations in design are based on the basic design criteria so as to conform to long-term sustainability of these shelters and consideration of user-friendly facilities. The design requirements generally include an occupational area of shelter: 280 to 400 sq. m with a capacity of 1300 to 2000 persons. The catchment area will vary from 8.00 to 16 sq.km. There will be adequate number of separate toilets for men and women varying from 4 to 5. The design uses environmentally sound provisions and the disaster shelter includes

262. The project will support

- renewable energy (solar lighting) for lighting purposes,
- rainwater harvesting storage tanks for water supply purpose,
- drinking water and sanitation facilities in the shelters and
- maintenance of the planned tree plantation through the school management and the community
- floors are furnished with situ mosaic to reduce damage and for easy maintenance;
- aluminum sliding windows were provided as per U.S. Architectural Aluminum Manufacturer's Association standard specification

- ramp for disabled

263. The environmental aspects of design criteria will also include maintaining the aesthetic view of the premises, save the agriculture land, play grounds, avoid felling of any tree or minimum number of trees, maintaining proper design with landscape etc. This involves

- Series of Consultation Meetings to be organized between Public Representative, Local Government Bodies (UP/WC), elites and local stakeholders of the area to select the location of shelters.
- Necessary surveys to conduct IEE/EA on the parameters such as physical location, socio-economic condition, communication, environmental aspects etc. with public consultations to solicit wisdom and experience of the stakeholders so as to reflect the aspirations of people.

### **9.3. In Project Benefit**

264. Project benefits for multipurpose disaster shelters include (i) ensuring safe sheltering of the project beneficiaries at the event of any disasters including cyclone, (ii) provide congenial learning environment and sufficient space in the classrooms at multipurpose shelters, (iii) overall improved schooling facilities and environment to be ensured at multipurpose disaster shelters conducive to children's learning, and (iv) affected people also will be able to bring their cattle to keep at safe shelters at the event of any disasters.

265. Environmental considerations in project benefit refer to environmentally sound design parameters to realize the project objectives and inclusion of provisions to realize those parameters. Besides being used as shelters, these school-cum-shelters is to be renovated with environment friendly provisions for the benefit of students, teachers and the whole community in general. The school-cum-shelters have provisions of Health Center, Community Center and Other Administrative Uses

266. There is provision of Access Road and Associated Structures to the Disaster Shelters so that the shelters can be accessed safely. This will be very useful for the users particularly students to commute with comfort particularly during rainy season. Separate floor for sheltering livestock will save quite a number of cattle and other livestock. The site will be developed and enhanced through a Land Use Plan and Tree Plantation.

267. The ancillary provisions in the shelters stemmed out from environmental considerations. These provisions can be used both during the time of emergency as well as during normal activities of the schools. These provisions include solar panel benefits for clean energy for the users. One of the most important needs during and after cyclones is the availability of drinking water. This is all the more important as surface water is often saline and in a few cases with traces of arsenic in hand pumps. To deter this, tube-wells on raised platform pumping safe water will be installed in the shelters. There will be provisions of rain water harvesting facilities in the shelters. First-Aid Boxes will be placed for each Shelter to take care of immediate requirements and there will be Separate Room for Pregnant Women during occupancy in the shelters. Provision of Store Rooms will solve storing of materials otherwise kept here and there creating environmental problems.

## **10. ENVIRONMENTAL MANAGEMENT PLAN**

### **10.1. Introduction**

268. The primary objective of the environmental management plan (EMP) is to record environmental impacts resulting from the sub-project activities and to ensure implementation of the identified “mitigation measures”, in order to reduce adverse impacts and enhance positive impacts. Besides, it would also address any unexpected or unforeseen environmental impacts that may arise during construction and operational phases of the sub-projects.

269. The EMP should clearly lay out: (a) the measures to be taken during both construction and operation phases of a sub-project to eliminate or offset adverse environmental impacts, or reduce them to acceptable levels; (b) the actions needed to implement these measures; and (c) a monitoring plan to assess the effectiveness of the mitigation measures employed.

270. The environmental management program should be carried out as an integrated part of the project planning and execution. It must not be seen merely as an activity limited to monitoring and regulating activities against a pre-determined checklist of required actions. Rather it must interact dynamically as a sub-project implementation proceeds, dealing flexibly with environmental impacts, both expected and unexpected. For all sub-projects to be implemented under MDSP, the EMP should be a part of the Contract Document.

The major components of the EMP include:

- Mitigation and enhancement measures
- Monitoring plan
- Grievance redress mechanism
- Estimation of cost of EMP
- Institutional arrangement for implementation of EMP



271. An Environment Management Plan (EMP) outlines the environmental management procedures that will be implemented during the project period and also in the operation & maintenance period to minimize the negative impacts and implementation of enhancement measures. An EMP should be drawn up as part of the Environmental Assessment (EA) at both IEE and EIA stages, to deal with follow-up activities during subsequent stages of project development: detailed design, construction, implementation, maintenance and decommissioning:

272. An Environmental Management Plan (EMP) should be developed to deal with all follow up activities during project construction, implementation, maintenance and abandonment (if required). EMPs have been formulated for the disaster shelters in pre-construction, construction and operation and maintenance phases. It will serve as guidelines for Upazila authorities, including DOE, as well as for the selected contractors and other parties involved in mitigating potential environmental impacts.

273. The overall impact assessment of the proposed sub-projects to be implemented under MDSP reveals that most of the 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 sub-projects. Environmental Management Plan (EMP) is prepared in a matrix on possible impacts, impact category/intensity and proposed mitigation measures resulting from the construction and operation of the project for shelter and connecting roads. It also assigns responsibility for implementation of mitigation and enhancement measures. The table shows below describes the standard mitigation and enhancement measures that could be applied to the sub-project under MDSP. The EMP should be integrated with the bid documents for procurement of contractor services to ensure the implementation of the mitigation measures.

**Table 10-1: Environmental Management Plan for Shelter**

<b>Activity/Issues</b>	<b>Potential Impacts</b>	<b>Proposed Mitigation and Enhancement Measures</b>	<b>Responsible Parties</b>
Construction and operation of labor shed for workers	<ul style="list-style-type: none"> <li>• Generation of sewage and solid waste; water/ environmental pollution</li> </ul>	<ul style="list-style-type: none"> <li>• Construction of sanitary latrine/ septic tank system.</li> <li>• Erection of “no litter” sign, provision of waste bins/cans, where appropriate</li> <li>• Proper disposal of solid waste</li> </ul>	Contractor (Monitoring by LGED and DS)
	<ul style="list-style-type: none"> <li>• Health of workers</li> </ul>	<ul style="list-style-type: none"> <li>• Raising awareness about hygiene practices among workers.</li> <li>• Availability and access to first-aid equipment and medical supplies</li> </ul>	
	<ul style="list-style-type: none"> <li>• Possible development of labor camp into permanent settlement</li> </ul>	<ul style="list-style-type: none"> <li>• Contractor to remove labor camp at the completion of contract</li> </ul>	

Activity/Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
	<ul style="list-style-type: none"> <li>• Outside labor force causing negative impact on health and social well-being of local people</li> </ul>	<ul style="list-style-type: none"> <li>• Contractor to employ local work force, where appropriate; promote health, sanitation and road safety awareness</li> </ul>	
General construction works for sub-projects	<ul style="list-style-type: none"> <li>• Drainage congestion and flooding</li> </ul>	<ul style="list-style-type: none"> <li>• Provision for adequate drainage of storm water</li> <li>• Provision of adequate diversion channel, if required</li> <li>• Provision for pumping of congested water, if needed</li> <li>• Ensure adequate monitoring of drainage effects, especially if construction works are carried out during the wet season.</li> </ul>	Contractor (Monitoring by LGED and DS)
	<ul style="list-style-type: none"> <li>• Air pollution</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure that all project vehicles are in good operating condition.</li> <li>• Spray water on dry surfaces/ unpaved roads regularly to reduce dust generation.</li> <li>• Maintain adequate moisture content of soil during transportation, compaction and handling.</li> <li>• Sprinkle and cover stockpiles of loose materials (e.g., fine aggregates).</li> <li>• Avoid use of equipment such as stone crushers at site, which produce significant amount of particulate matter.</li> </ul>	
	<ul style="list-style-type: none"> <li>• Traffic congestion, traffic problems</li> </ul>	<ul style="list-style-type: none"> <li>• Schedule deliveries of material/ equipment during off-peak hours.</li> <li>• Selection of alternative routes, where possible for sub-project vehicles</li> <li>• Depute flagman for traffic control</li> <li>• Arrange for signal light at night</li> </ul>	
	<ul style="list-style-type: none"> <li>• Noise pollution</li> </ul>	<ul style="list-style-type: none"> <li>• Use of noise suppressors and mufflers in heavy construction equipment.</li> <li>• Avoid using of construction equipment producing excessive noise at night.</li> <li>• Avoid prolonged exposure to noise (produced by equipment) by workers.</li> <li>• Regulate use of horns and avoid use of hydraulic horns in project vehicles.</li> </ul>	
	<ul style="list-style-type: none"> <li>• Water and soil pollution</li> </ul>	<ul style="list-style-type: none"> <li>• Prevent discharge of fuel, lubricants, chemicals, and wastes into adjacent rivers/ khals/ drains.</li> <li>• Install sediment basins to trap sediments in storm water prior to discharge to surface water.</li> </ul>	
	<ul style="list-style-type: none"> <li>• Felling of trees, clearing of vegetation</li> </ul>	<ul style="list-style-type: none"> <li>• Replant vegetation when soils have been exposed or disturbed.</li> <li>• Plantation to replace felled trees</li> </ul>	

Activity/Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
	<ul style="list-style-type: none"> <li>• Accidents</li> </ul>	<ul style="list-style-type: none"> <li>• Following standard safety protocol.</li> <li>• Environmental health and safety briefing.</li> <li>• Provision of protective gear.</li> </ul>	
	<ul style="list-style-type: none"> <li>• Spills and leaks of oil, toxic chemicals</li> </ul>	<ul style="list-style-type: none"> <li>• Good housekeeping.</li> <li>• Proper handling of lubricating oil and fuel.</li> <li>• Collection, proper treatment, and disposal of spills.</li> </ul>	
All construction works	<ul style="list-style-type: none"> <li>• Beneficial impact on employment generation</li> <li>• General degradation of environment</li> </ul>	<ul style="list-style-type: none"> <li>• Employ local people in the project activities as much as possible.</li> <li>• Give priority to poor people living in slums within project area in sub-project related works (e.g., excavation and other works, which do not require skilled manpower).</li> <li>• Environmental enhancement measures, such as plantation, landscaping, traffic and safe signs, construction site fencing (where appropriate)</li> </ul>	Contractor (Monitoring by LGED and DS)
Excavation/ Earth works/piling work	Discovery of historical items and cultural remains	<ul style="list-style-type: none"> <li>• Follow “chance find procedure” (see Annex-6) for protection of cultural resources</li> </ul>	LGED and Consultant, with support from Contractor
Quarterly Monitoring Report Preparation and Submitted to World Bank			LGED with the help from environment specialist of DS consultant and M&E

## 10.2. Disaster Management Plan

274. Disaster Management can be defined as the organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, in particular preparedness, response and recovery in order to lessen the impact of disasters. Emergency Preparedness Planning (EPP) and Contingency Planning (CP) are the processes of disaster management plan for developing strategies, arrangements and procedures to address the humanitarian needs of those adversely affected by the crisis. There are four main types of disaster, namely; Natural disasters, Environmental emergencies, Complex emergencies and Pandemic emergencies.

275. For MDSP the Disaster Management Plan of a sub-project is to be a part of Union Disaster Plans. It is a contingency plan. Preparation of the disaster management plan is to be prepared by the School Management Committee (SMC) and the Union Disaster Management Committee (UDMC). The Union Disaster Plan for the sub-projects under a Union should be prepared jointly by the SMC and the UDMC. They would identify the immediate needs, prioritize the tasks and identify resource requirements to

address the humanitarian needs of those adversely affected by the crisis. The coordination role of the SMC is also very important while implementing DMPs.

### 10.3. Environmental Monitoring Plan

276. The primary objective of the environmental monitoring is to record environmental impacts resulting from the sub-project activities and to ensure implementation of the “mitigation measures” identified earlier in order to reduce adverse impacts and enhance positive impacts from project activities. During implementation of all sub-projects, the LGED with support from the consultant will be responsible to monitor and make sure that the environmental mitigation/enhancement measures (including health and safety measures) outlined in the EMP for the particular sub-project are being implemented in accordance to the provisions of the Tender Document.

277. A number of indicators on the key environmental issues have been proposed to identify changes taking place in respect of the issues relevant to the project. Apart from general monitoring of mitigation/enhancement measures, important environmental parameters to be monitored during the construction phase of the sub-projects include air quality, noise level, water quality, drainage congestion, and traffic problems. However, the requirement and frequency of monitoring would depend on the nature of sub-project and field situation. The parameters and their frequency of monitoring should be provided along with cost of monitoring plan and institutional arrangements for conducting monitoring. Reporting formats would be provided along with an arrangement for reporting and taking corrective action.

278. Some specific requirements and measures as environmental monitoring action plan are given at Table 10-2. These issues include dust, noise control, waste disposal, health and safety, water supply and sanitation should be taken care of by the contractors and these works are to be within the budget of contract amount. The schools may need either temporary rescheduling of the class timing or the special time scheduling to adjust with school timing during the construction period. This should be negotiated between the school authority and the contractor to find alternative time.

**Table 10-2: Environmental Monitoring Plan (EMP)**

Sl.#	Issues	Potential Impact	Mitigation Measures	Frequency	Responsible Organization	
					Implement	Monitoring
1	Surface and ground water pollution	Contamination of surface or ground water table	<ul style="list-style-type: none"> <li>• Ensure wastes are disposed of properly away from the site.</li> <li>• Ensure septic tanks and soak wells are of proper design</li> </ul>	Weekly	Contractors/ Design and Supervising Consultants	XEN, LGED ADTL/FRE of MDS Consultant
2	Air/Dust pollution	Health hazard to school children and residents	<ul style="list-style-type: none"> <li>• School should be temporarily moved during dismantling and rehabilitation</li> <li>• Cost of temporary shifting be included</li> <li>• Sprinkle water on dusty roads</li> </ul>	Daily	Contractors/ Design and Supervising Consultants	XEN, LGED ADTL/FRE of MDS Consultant

Sl.#	Issues	Potential Impact	Mitigation Measures	Frequency	Responsible Organization	
					Implement	Monitoring
			<ul style="list-style-type: none"> <li>• Cover stockpiles</li> </ul>			
3	Noise pollution	Hearing hazards to school children and residents	<ul style="list-style-type: none"> <li>• School should be temporarily moved during dismantling and rehabilitation with cost of temporary shifting be included</li> <li>• Schedule transportation not to disturb the community</li> <li>• Keep speed reduction provision in critical areas and turns</li> <li>• The machineries should have silencing devices</li> </ul>	Daily	Contractors/ Design and Supervising Consultants	XEN, LGED ADTL/FRE of MDS Consultant
4	Waste disposal/ Management	Contamination of water	<ul style="list-style-type: none"> <li>• Wastes and debris are to be disposed properly</li> <li>• Construction debris must be stockpiled and removed.</li> <li>• Do not drop or expose any debris while transporting.</li> </ul>	Daily	Contractors/ Design and Supervising Consultants	XEN, LGED ADTL/FRE of MDS Consultant
5	Soil erosion	Land slide/ battered slope, rain-cut, absence of vegetation	<ul style="list-style-type: none"> <li>• Ensure layer to layer compaction</li> <li>• Take soil stabilization measures</li> <li>• Re-vegetate and restore disturbed soil</li> <li>• Ensure appropriate designing of slopes to prevent slumping, slippage and erosion</li> </ul>	Monthly	Contractors/ Design and Supervising Consultants	XEN, LGED ADTL/FRE of MDS Consultant
6	Trees and vegetation	Deforestation and desertification	<ul style="list-style-type: none"> <li>• Enhance environment by tree plantation in proper places of school premises and road side</li> <li>• Encourage re-vegetation of barren surfaces</li> </ul>	After Construction	Contractors/ Design and Supervising Consultants	XEN, LGED ADTL/FRE of MDS Consultant
8	Water supply and sanitation	Incidence of diseases	<ul style="list-style-type: none"> <li>• Ensure adequate supply of drinking water.</li> <li>• Sanitation facilities for male and female workers separately</li> </ul>	Daily	Contractors/ Supervising Consultants	XEN, LGED ADTL/FRE of DS Consultant
9	Health and safety	Health and general safety of workers	<ul style="list-style-type: none"> <li>• Ensure adequate safety gears for workers.</li> <li>• Arrange training for contractors and workers</li> </ul>	Daily	Contractors/ Supervising Consultants	XEN, LGED ADTL/FRE of MDS Consultant

#### 10.4. Grievance Redress Mechanism

279. Grievance Redress Mechanism (GRM) is a valuable tool which will allow affected people to voice concerns regarding environmental and social impacts for MDSP's sub-project 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 offices will establish a procedure to answer sub-project-related queries and address complaints, disputes, and grievances about any aspect of the sub-project, including disagreements regarding the assessment and mitigation of environmental and social impacts. Generally, the grievance redress committees (GRC) are of two types (i) formal courts of appeal and (ii) a locally constituted GRC for dispute resolution. The second may not totally avoid but may reduce the problem significantly. Grievance Redress Committee (GRC) will be formed as suggested in Section 11.1.3. The GRC will ensure proper presentation of complaints and grievances, as well as impartial hearings and transparent decisions. The GRCs will meet periodically to discuss the merit of each case and fix a date for hearing and notify the aggrieved persons to submit necessary documents in proof of her/his claim/case; resolve grievances within one month of receipt of complaint. Additional details regarding the functioning of GRC is presented in the SMF.

#### 10.5. Method of Estimation of Cost for EMPs

280. Some activities included in EMPs have certain monetary involvement. The cost of the environmental mitigation measures in the EMP will be estimated and. Cost of implementing environmental management plan (EMP) including monitoring activities needs to be estimated as a part of the preparation of EMP and will be included in the bill of quantities of bid document. Many of the activities to be carried out as a part of EMP would not involve any additional direct cost e.g., employing local work force, where appropriate; keeping sub-project vehicles in good operating condition; scheduling deliveries of materials/ goods in off-peak hours; use of fuel; etc. On the other hand, a number of activities would require additional cost. Environmental monitoring during both construction and operational phases would involve direct cost. At the same time, a number of mitigation measures (including health and safety measures) would also require additional cost; these include installation of septic tank/sanitary latrine/portable toilets, installation of health and safety signs, awareness documents (signs/ posters), water sprinkling on aggregates, plantation etc. The generic method of determining the cost of the EMP is outlined below:

**Table 10-3: Method/ basis of estimation of cost of Monitoring**

Item	Basis of cost / Estimated cost
<b>Monitoring:</b>	
Air Quality (SPM or PM <sub>10</sub> or PM <sub>2.5</sub> )*	Prevailing rate (~ Tk. 10,000/- per unit)
Noise level	Prevailing rate (~ Tk. 5000/- per unit per day)
Water quality (pH, BOD <sub>5</sub> /COD, Oil and grease)	Prevailing rate (~ Tk. 15,000/- per sample)
Water quality (pH, BOD <sub>5</sub> or COD, NH <sub>3</sub> )	Prevailing rate (~ Tk. 7,000/- per sample)
Installation of septic tank/ sanitary latrine/ portable toilet	Prevailing rate/ Latest PWD/ LGED rates
Health/ safety signs (size and number)	Prevailing PWD/ LGED rate / Lump sum
Water sprinkling on aggregates or unpaved roads in work area	Latest PWD/ LGED rate (if available)/ A fixed rate per square meter

Traffic control (estimate number of flagman needed and duration of work)	Latest PWD/ LGED rate (if available)/ A fixed rate per flagman per day/ Lump sum amount
Traffic light	Latest PWD/ LGED rate (if available)/ Lump sum amount
Protective gear	Contractor to quote rate of items of works considering provision of adequate protective gear for workers, in accordance to work
Plantation (including protection/ fencing and conservation during project period)	Prevailing rate (~ Tk. 1,000/- per plant)

\* Depending on availability of facility for measurement

## 10.6. Environmental Code of Practice (ECoP)

281. The Environmental Code of Practice (ECoP) is prepared as a guideline for environment management of the subprojects to be implemented in different coastal area under the MDSP. The purpose of the Code of Practice is to ensure that construction activities are conducted in a manner that minimizes impacts on the environment. It promotes awareness and use of best practice in environmental management.

282. ECoP is applicable to the construction sites and associated activities such as stockpile sites, disposal sites for clean excavated materials, etc. Responsibility lies with all the people involved in any given project to adopt environmentally responsible work practices. Best environmental management practice requires environmental awareness, and appreciation of one's environmental responsibilities. Measures taken to prevent environmental impacts are preferred to those designed to control the impact. Also the environment screening will help in determining whether a proposed subproject should be subjected to follow the Environmental Code of Practices (ECoP) for mitigate or avoid the impacts or need further review with preparation of separate environmental management plan for that subproject with appropriate mitigation measures.

283. The main objective of an ECoP is to manage construction operations in harmony with the environment in an effort to contribute to the well-being of the community and the environment by:

- Minimizing pollution
- Sustaining eco-systems
- Conserving cultural heritage
- Enhancing amenity

284. The Environmental Code of Practice (ECoP) includes a list of activities associated with infrastructure development considered in the MDSP. The ECoP outlines activities on different issues related to project implementation. The ECoP developed will address the following issues related to sub-project operation:

1. Planning and Design Phases of a Project
2. Site Preparation
3. Construction Camps
4. Borrow Areas
5. Waste Management
6. Water Bodies
7. Water Quality

- 8. Drainage
- 9. Public Health and Safety
- 10. Material Storage, Transport, and Handling
- 11. Vegetation

285. A particular sub-project within the MDSP may involve all or some of these issues. Annex -5 presents the ECoPs for different activities of sub-projects.

#### **10.7. Special Environmental Clauses (SECs) for Tender Document**

286. Apart from the provisions under “General Specification” and “Particular Specification” for different sub-project components, the following special environmental clauses (SECs) shall be included in the Tender Document under General/Particular Specification. These clauses are aimed at ensuring that the Contractor carries out his responsibility of implementing the EMP and other environmental and safety measures.

#### **Environmental Management Plan (EMP):**

287. The Contractor shall carry out all mitigation and enhancement measures (including those related to mitigation of air/noise/water pollution; drainage/traffic congestion) as specified in the Environmental Management Plan (EMP), annexed to this Contract.

#### **Temporary Works:**

288. The Contractor shall make sure that all equipment and safeguards required for the construction work such as temporary stair, ladder, ramp, scaffold, hoist, run away, barricade, chute, lift, etc. are 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.

#### **Health and Safety:**

- The Contractor shall observe and maintain standards of Health and Safety towards all of his employees not less than those laid down by the national standards or statutory regulations.
- Where appropriate, to prevent workers falling from heights, the Contractor shall make sure that 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 or a hinged cover, or constantly attended; every stairway floor opening shall be guarded by railing at least 900 mm high on the exposed sides; every ladder way floor opening or platform shall be guarded by a guard railing; every open sided floor or platform 1.2 m or more above adjacent ground level shall be guarded by a railing on all open sides.
- The Contractor shall provide all appropriate protective clothing and equipment for the work to be done and ensure its proper use. Where required, safety nets, belts, harnesses and lines shall be provided by the contractor. The “safety directives for work equipment” and “safety directives for protective gears”, as specified in the Occupational Health and Safety Guidelines (attached) shall be followed.



- The Contractor shall provide and maintain in prominent and well-marked positions all necessary first-aid equipment, medical supplies and other related facilities. A sufficient number of trained personnel will be required to be available at all times to render first aid.
- The Contractor must provide or ensure that appropriate safety and/or health signs are in place at their work sites where hazards cannot be avoided or reduced.
- The Contractor shall report to the Engineer promptly and in writing particulars of any accident or unusual or unforeseen occurrences on the site, whether these are likely to affect progress of the work or not.

#### **Disposal and Pollution:**

- The Contractor shall not dispose any waste, rubbish or offensive matter in any place not approved by the Engineer or Statutory Authority having jurisdiction. The Contractor shall not discharge into any watercourse oil, solids, noxious or floating materials.
- The Contractor shall take all reasonable precautions to keep public or private roads clean of any spillage or droppings from his vehicles or equipment. Any spillage or droppings which accrue shall be cleaned without delay to the satisfaction of the Engineer.
- The Contractor shall construct sanitary latrine or septic tank system or install portable cabin toilet for disposal of human waste in the site office and temporary labor sheds for workers/ employees; the Contractor shall provide waste bins/ cans for collection of solid waste at appropriate locations (as directed by the Engineer), and ensure proper transfer/ disposal of solid waste with support from the local government authority.

#### **Earthworks:**

- During excavation of trenches in natural soils, the Contractor shall make sure that the first 300 mm to 450 mm of topsoil be excavated and stored on one side of the trench and the rest of the excavated soil is stored separately/ on the other side; during back filling of trench, the topsoil should be placed on the top again.

289. A description of environmental items needed to be considered in the budget estimates and subsequently these items have to be incorporated in the bid document. Typical Bill of Quantities (BOQ) for Environmental Works is shown in Annex-7.

#### **10.8. ICT Monitoring:**

ICT monitoring will be used to enhance the efficiency of MDSP-II by providing a single-stop instrument to monitor progress of construction, provide visual images to assess quality, and monitor the number and frequency of visits from LGED engineers and World Bank teams tasked with supervision. The smartphone-based ICT platform includes mechanisms for real-time monitoring of data capture, participatory tracking of project progress and irregularities, and comment submission. The platform automatically adds date and time, and GPS coordinates to form data and photos, which are transmitted upon submission to an online database. In geographic areas without mobile internet, the submission is stored on the phone memory and transmitted at a later time. The online database will be accessible to permitted users, where reports will be pinned to the shelter locations which are visible on an interactive map interface. ICT monitoring will provide in-depth and real-time snapshots of project performance in a

resource-constrained environment, automatically place pressure points on identified problem shelters, inject transparency into the construction process, and motivate supervision teams and contractors.

### **10.9. General Principles for Environmental Management**

290. The Environmental Management Procedure establishes the criteria to identify the level of Environmental Assessment (EA) and the processes involved, their sequence to conduct the EA studies for various subprojects under MDSP including their legal requirements and implications

- LGED will be responsible for the environmental compliance monitoring and oversight to ensure overall project environmental compliance. The Consultants that would be hired by LGED would assist the project proponent to carry out this mandate.
- The implementing agency will follow the related government rules (laws, ordinances, acts etc.) and World Bank Operational Policies and Guidelines. This EMF would serve as the basis for ensuring this compliance.
- LGED will submit the EMF to the Department of Environment (DOE) for their review and concurrence.
- LGED will ensure the participation of local community in planning and implementation of sub-projects.
- No project activities will be carried out in and nearby the environmental protected and critical areas as well as in disputed lands or lands restricted for development.
- All the activities proposed under the project will abide by existing Environmental Code of Practices (ECP).
- LGED will ensure that proper environmental screening will be done by the design consultant.
- Design consultant will ensure that environmental considerations are given sufficient attention. To this end, it will carry out Environmental Management Plan (EMP) with cost estimate for all subprojects based on screening criterion.
- Bid documents will prepare by the design consultant and Environment Management Plan(EMP). The general ECoP, relevant environment clause, text of site specific EMP and the cost of EMP will have to be incorporated in the respective section of bid document.
- EMP implementation will be done by the Contractor and supervised by the design consultant and monitoring should be done by management consultant.

## **11. SOCIAL MANAGEMENT PLAN**

### **11.1.1. Social Development Guidelines**

291. Subproject sites will be selected at strategic locations to ensure that the vulnerable section of the communities in terms of proximity including the very poor, women, tribal peoples, traditional minority communities, and marginalized, disabled etc., get access to disaster shelters. In accordance with the local government act 2009, the communities have been empowered with an opportunity to decide, implement and monitor the development programs. Accordingly, the focus will be to promote participatory processes through the sub-project cycles.

292. The local government acts and the Right to Information Act (2009) recognize that stakeholders can exercise their rights to access information in context of development programs and the public institutions including the LGED are obligated to place information in public domain. This creates an enabling environment to develop trust among implementing partners and builds in checks and balances to strengthen the system. Subproject information will be disclosed in public domain including the social screening/assessment report, social management plan, and where applicable resettlement action plan and or tribal peoples development plan.

293. The project will implement social accountability tools to improve citizen participation and transparency. Strengthened transparency and accountability includes display of information of all activities including cost, at prominent and public places in the catchment areas of shelter and shelter connecting roads, participation of communities in monitoring and evaluation, and use simple formats for reporting findings at planning and implementation stages. Specific measures will be designed on (i) consultation, feedback and grievance-redress mechanisms to alert project staff to problems identified by beneficiaries, affected people, and other stakeholders; (ii) participatory planning to ensure the project meets the needs of beneficiaries; and (iii) participatory monitoring and evaluation for identification of problems.

294. LGED will prepare and implement social management plans (SMP) with strategy for obtaining land for shelter sites and shelter connecting roads in consultation with the communities, local public

administration and local government institutions. The contracted design and supervision consultant will assist LGED in development of inclusive SMP. The selection criteria will be finalized through discussion with the beneficiary communities to avoid elite capture and exclusion. LGED will share the SMP with the Bank for review and concurrence for implementation before award of civil works contract.

### **11.1.2. Communication and Participation Strategy**

295. Overall development objective of MDSP is to reduce vulnerability of the coastal population to natural disasters. When structural measures are the key interventions to achieve the objectives, the community is concerned about quality construction, size of shelter buildings and the lifespan of the shelters and shelter connecting roads. The communication and participation strategy encourages civic engagement, where the community is part of the planning and monitoring process of the subprojects. The strategy promotes a two-way communication, exchanging knowledge and skills for a sustainable disaster management consistent with facts on the ground. LGED will share the project information with the communities and have meaningful consultation with them at all stages of site selection, obtaining lands, civil works design, and construction scheduling. Communication and participation process will include (i) disclosure and consultation meetings, (ii) distribution of leaflets and brochures on the subprojects to be prepared as and when necessary and (iii) need based field visits during planning, design and implementation. Feedback from consultation process will be given due consideration for site selection, subproject design, and implementation. Community participation will be sought in the process of operation and maintenance in the management committees of shelter facilities under the demise of the Disaster Management Committee at the union level. Beneficiary participation and their feedback through consultation will be the key to sustainability of the shelter infrastructures in the project area. They will be mobilized, kept informed for design and construction quality control.

### **11.1.3. Grievance Response**

296. The project will establish a grievance response mechanism (GRM) to answer to queries, receive suggestions and address complaints and grievances about any irregularities in application of the guidelines adopted in this framework for inclusive project design, and assessment and mitigation of social and environmental impacts. Based on consensus, the procedure will help to resolve issues/conflicts amicably and quickly, saving the aggrieved persons from having to resort to expensive, time-consuming legal action. The procedure will however not pre-empt a person's right to go to the courts of law. Grievance response focal points will be available at the Union or *Paurasava* (municipality) in the shelter catchment area and at the project level within LGED. A Grievance Redress Committee (GRC) will be formed for each subproject and will be authorized to deal with all suggestions and complaints at the subproject level. Details of the grievance response process is given at Annex-10.

## **11.5. Land Acquisition and Resettlement Policy Framework**

### **11.5.1. Guidelines for Obtaining Lands for Subprojects**

297. Involuntary resettlement issues are expected to arise where Subprojects require additional lands that induce physical and economic displacement of peoples either permanently or temporarily. Where expansion of existing land boundary of any infrastructure is a critical part of development to

materialize expected benefits, the LGED will use the following guidelines to obtain public and private lands.

- Lands owned by sponsoring institutions. LGED will identify sites for construction of new cyclone shelters or of horizontal extension of any existing shelters where the sponsoring institution has sufficient free lands in their ownership for such infrastructure. Government Primary Schools (GPS) are the priority institutions to provide lands for the infrastructures. LGED will prepare a list of the sponsoring institutions having sufficient land useable for civil works construction for new building and obtain no objection from the Ministry of Primary and Mass Education. In case of Non-Government Primary Schools or other private/community institutions, demarcated lands should be transferred to the Ministry of Primary and Mass Education before finalization of the sites.
- Public Lands. Where public lands, selected for shelter or roads construction, are in use by well-off persons and stoppage of further use would be socioeconomically inconsequential, LGED and communities may persuade the users to relinquish occupancy of the lands and look for alternative lands, if they refuse. Where these lands are currently used for living and/or livelihood by the poor and vulnerable, LGED and beneficiaries can obtain them by offering socioeconomic rehabilitation measures acceptable to the affected persons. *However, the current users will have the option to refuse to relinquish occupation of the lands without the fear of any adverse consequences. RAP will be prepared and implemented for compensation and livelihood restoration of the affected persons.*
- Private Land on 'Voluntary Donation. Since the shelters and shelter connecting roads are community demand driven infrastructure to reduce disaster vulnerability of the coastal population, the concerned land owner, if persuaded, may elect to donate the lands without compensation with full understanding of the price of the land and the World Bank OP 4.12 on involuntary resettlement. LGED, however, will ensure that,
  - The contributions are voluntary;
  - There are no encumbrances on the donated lands;
  - The donations do not affect the livelihood of vulnerable persons and, if it does, LGED and/or the community devise and implement mitigation measures acceptable to the affected persons;
  - The donors are made aware of the grievance redress mechanism of the project;
  - The donors give up all claims on the lands and the titles are transferred to the recipient through the legal process in the country; and
  - The voluntary donations are documented through an MOU (see Annex-15)
- Private Land on 'Direct Purchase or Exchange or contribution against compensation'. Voluntary donations are seen more feasible where the landowners are well-off and they are very few in number. However, in critical circumstances where voluntary donation is not a feasible option, LGED may pursue the sponsoring entity and the community, as the case may be, for direct

purchase the lands on willing buyer and willing seller basis. Alternately, the owners may opt to provide the lands on contribution against compensation or in exchange of similar lands elsewhere. *The landowners, in any circumstances, will have the right to negotiate the price of the lands or refuse sale/contribution of the lands without the fear of any adverse consequences.*

- Private Land on 'Acquisition Using the Power of Eminent Domain'. In cases where voluntary donation or direct purchase could not be initiated, but the land in question is a critically required, LGED may go for acquisition of the land using legal procedure. The World Bank Operational Policy on Involuntary Resettlement (OP 4.12) will apply and RAP will be prepared and implemented. Land acquisition process will be initiated in advance for timely implementation of subprojects requiring acquisition of lands.

298. In cases of voluntary donation LGED will (i) ensure that landowners and communities are made fully aware of their rights and obligations; (ii) verify that contributions are truly voluntary; and (iii) that the donors are the legal owners of the lands being obtained and there are no outstanding issues of taxes or any dispute over ownership.

#### **11.5.2. Resettlement Policy Guidelines**

299. The Ordinance II of 1982 is not adequate to deal with the adverse impacts associated with land acquisition and involuntary displacement in compliance with the Bank's OP 4.12 on Involuntary Resettlement. The Ordinance has no provisions for resettlement of the affected households/businesses or any assistance for restoration of livelihoods of the affected persons. Land acquisition, therefore potentially diminishes productive base of affected farm families and infringe impoverishment risks to those physically or economically displaced due to undertaking of infrastructure projects. As the legal framework falls short of the provisions of the World Bank OP 4.12 on Involuntary Resettlement, the project will apply the following added mechanisms to meet the Bank's requirements:

- Avoid or minimize resettlement: The law only implicitly discourages unnecessary acquisition, as lands acquired for one purpose cannot be used for a different purpose. However, there are no mechanisms to monitor if this condition is actually adhered to.
- Eligibility for compensation: The law stipulates compensation only for the persons who appear in the land administration records as the owners. It does not recognize the rights of those, such as squatters, who do not possess legal title to the lands they live in or make a living from.
- Compensation: The law provides compensation for lands and other objects built and grown on them (structures, trees and orchards, crops and any other developments like ponds, built amenities, etc.). No provisions are there to assess and restore lost income stream or income sources that acquisition causes to the affected persons, be they legal titleholders or others like squatters, tenants and employees of affected businesses.
- Compensation standards: Although the law stipulates 'market prices' of the acquired lands as the just compensation, the legal assessment method almost always results in prices that are far below

the actual market prices<sup>6</sup>. Certain pricing standards, which are regarded as unrealistic, are used to assess other losses like structures and various built amenities, trees, crops and the like.

- *Relocation of households and other establishments:* No legal obligation is there to relocate, or assist with relocation of, those whose homesteads have been acquired or whose place of residence or livelihoods has been affected. Such persons/households, be they titleholders or squatters, are left on their own.
- *Ensuring payment of compensation:* Lands are legally acquired and handed over to the project execution agency as soon as the acquisition authority identifies the owners (or 'awardees'), by examining the records, and sends a legal notice advising them to claim the compensation (or 'awards'). It is the obligation of the affected landowners to prove, by producing an array of documents that the acquired lands legally belong to them. As gathering these documents is a long, expensive and cumbersome process, many landowners may remain unable to claim their awards<sup>7</sup>.
- *Socioeconomic rehabilitation:* The law shows no concern whatsoever about the long-term socioeconomic changes the affected persons and households might undergo in the post-acquisition period. There is no provision in the law except compensation for ensure economic rehabilitation and social reintegration of the displaced persons.

### 11.5.3. Eligibility and Entitlements Policy

300. Under project resettlement policy framework, the affected persons and groups eligible for compensation and assistance will include: (i) owners with legal titles/agreements to the affected lands and other properties (tenants, share-croppers); (ii) squatters/encroachers<sup>8</sup> and others using public/khas lands; (iii) sponsors/beneficiaries of development programs using public/khas lands (e.g., social/community forestation and other land-based income generation programs for socioeconomically vulnerable groups); (iv) persons with usufruct rights; and (v) communities/groups where impacts are community-wide.

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<sup>6</sup>According to the law, the 'market price' is calculated by averaging the sales prices recorded in the previous one year, in terms of land characteristics by land administration units or mauzas. But it is a widely accepted fact that prices determined as such hardly reflect the true market value of the lands. As the sale/acquisition prices are grossly under-reported to evade on sale taxes, assessment of legal compensation almost always fall far too short of the real market prices.

<sup>7</sup>In the present land administration system, which is widely accepted as antiquated, land transactions, especially in the rural areas, often remain incomplete. Even after the sale/purchase deeds are legally executed, the sellers continue to remain as owners in the legal records until mutations are completed. As the transaction process is cumbersome and involves costs beyond those mandated by the law, and the practice that lands can be used with the deeds alone, most land transactions do not follow the process beyond deed execution. Many land purchasers are even not aware of the mutation or its significance.

<sup>8</sup> Household or person occupying public lands without legal arrangements with the GoB or any of its concerned agencies is a squatter to the lands. Squatters having land of their own attached to the public land/embankment or elsewhere are defined as encroacher.

301. Eligibility of project affected persons for compensation and assistance recognized under the project include the following:

- a) Compensation for the acquired private lands, which includes homesteads, agricultural and other lands, including ponds and similar developments, will be paid at 'replacement costs' to be determined through market surveys.
- b) All affected non-land properties, such as houses and other structures, trees, seasonal and perennial crops, orchards and other immovable items of value will be compensated at replacement costs at the time of dispossession.
- c) Eligibility for compensation and assistance will be governed by Cut-Off Dates. These are the dates on which census of the affected persons and their assets will be taken. Assets such as houses/structures and others which are created, and the persons or groups claiming to be affected, after the cut-off dates will be ineligible for compensation.
- d) Where acquisition causes displacement from homesteads where the affected persons may or may not have title to the land, the project will encourage, compensate for and assist with self-relocation. Where self-relocation is infeasible, the project will arrange for lands to relocate to, and provide for basic social and physical infrastructure.
- e) Where project interventions cause to displace squatters/encroachers on the executing agency's own land (LGED's land or the lands owned by the sponsoring institutions), compensation will be provide for any physical assets (structure, trees, crops, & perennials) on the land owned by them.
- f) Assets like equipment, machinery and parts/components thereof which can be dismantled and moved away, will not be eligible for compensation. But the owners will be paid an amount to cover the dismantling and moving costs at current market price.
- g) Owners of the affected businesses will be compensated for temporary loss of income for a period of time needed to reopen the business at relocated site. However, if a business, which is recorded in the census, closes down or moves away for reasons unrelated to the project, it will not be eligible for this compensation.
- h) Employees of the affected businesses will be compensated for temporary loss of income for a period of time needed to reopen the business at relocated site. However, an employee, who is recorded in the census to be employed with a business, will not be eligible for this compensation if (i) the person leaves the business because of personal reasons, or (ii) if the employee is a minor member of the business owner's household and helps him/her on a part-time basis, or (iii) the business closes down or moves away for reasons unrelated to the project.
- i) Compensations/entitlements due to the PAPs will be paid in full before they are evicted from the acquired private and public lands.



- j) The project will identify and implement policies to mitigate any adverse impacts that are unique to the project and have so far remained unknown.

302. The eligibility and entitlement matrixes under the provisions of national law (Ordinance II of 1982) and the Bank policy on Involuntary Resettlement (OP 4.12) are given at **Annex-12**.

#### **11.5.4. Preparation of RAP**

303. The results of the census, socioeconomic survey and community consultation will be decisive element in selection of the design, size and location of the sites. Once the sites are selected and boundaries finalized, inventory of assets and PAP census will be carried out to identify the impacts for mitigation measures in line with the SMF. Resettlement Action Plan (RAP) will be prepared for each construction package of subprojects requiring land acquisition and/or population displacement in any subproject in the package using the data from the SIA and consultation with PAPs and all other relevant stakeholders. In case a subproject affects less than 200 people, an abbreviated RAP may be prepared. Contents of a RAP or an Abbreviated RAP will include the following:

##### **Contents of RAP**

- Brief description of the improvement and rehabilitation works undertaken on the individual site (or contract in cases of multiple contracts) with location of major impact spots;
- Results of census survey and summary of impact details (PAP/household level raw data will be computerized to prepare the entitlement files);
- An account of the alternatives considered to avoid and/or minimize the adverse impacts;
- An account of the consultations with the affected persons/households about the mitigation measures and implementation procedure;
- Specific compensation rates and standard of entitlements and entitled persons/households for different types of losses as per the principles and guidelines adopted in this SMF;
- An account of impacts by gender and vulnerability due to site development and construction of shelters and connecting roads and the special assistance that is to be provided;
- Description of resettlement sites and programs for improvement or restoration of livelihoods and standards of living;
- Grievance redress mechanism;
- Resettlement budget with breakdowns by loss categories and the number of persons entitled to compensation/assistance, and a RAP implementation schedule; and
- Monitoring and evaluation.

##### **Contents of abbreviated RAP**

- Documentation of the private and public lands, including LGED's own, required for the civil works for construction and improvement of shelter and development of shelter connecting roads, a census survey of affected persons, and valuation of the affected assets;
- Description of compensation and other resettlement assistance that will be provided according to the principles and guidelines adopted in this SMF;

- An account of the consultations with the displaced persons/households about acceptable alternatives;
- Grievance redress mechanism;
- A resettlement budget with breakdowns by loss categories and the number of persons entitled to compensation/assistance, and an Abbreviated RAP implementation schedule;
- Monitoring and evaluation.

304. LGED will prepare and submit to the Bank for safeguards review, clearance and public disclosure of SMP/SIA including any RAP for each package of civil works program. A social screening report will be prepared for all specific sites based on the SMF. All civil works package SMP, SIA and RAP will be disclosed locally and in Bank InfoShop in due course for finalization of the documents before award of civil works contracts.

## **12. INSTITUTIONAL ARRANGEMENT FOR SAFEGUARD COMPLIANCE AND CAPACITY BUILDING**

### **12.1. Institutional Arrangement for Safeguard Compliance**

305. The existing Project Management Unit (PMU) for the development and management of the multipurpose cyclone shelters program under ECRRP is the proposed PMU of MDSP. However, it would be strengthened with an additional Deputy Project Director (DPD). The DPD would be supported by a Senior Technical Specialist, Senior Procurement Specialist, a Senior Financial Management Specialist, a Senior Environment Specialist, a Senior Social Development Specialist, a Communication Specialist and a GIS specialist –altogether about 10 professional level positions and support staff as required and as agreed with the World Bank. The Field Level Offices in each district headed by an Executive Engineer would be responsible for supporting the construction supervision and environment and social management with the help of a design and construction supervision consultant.

306. The Project Director, with assistance from the Senior Social Development Specialist (Draft TOR at Annex-13)., will carry out the following specific tasks related to obtaining lands for shelter sites and shelter connecting roads and where applicable, land acquisition and resettlement: (i) engage local government institutions and the communities in voluntary land acquisition process; (ii) liaison with district administration to support land acquisition; (iii) day-to-day management, supervision, monitoring of resettlement work; and (iv) ensure timely availability of budget for all activities; (iv) synchronize resettlement activity and handover land as per the construction schedule; (v) initiate to form necessary participatory bodies for assessment and valuation of affected assets under legal acquisition process as well as for direct purchase of lands by the sponsoring institutions.

307. The LGED will hire and use the design and supervision consultancy (DSC) services of international /national firm through competitive selection in engineering surveys, designs, environmental assessments, and preparation of EMPs, social screening of subprojects and preparation of SMP along with RAP including data collection and construction supervision including quality assurance, preparation of bidding documents and final certification of quantity and quality compliance of works completed by the contractors. As part of the activities, the environment specialists of DS consultant will conduct the IEE and EIA (where applicable) with EMPs. Site specific IEE, EIA, and EMPs will be prepared for each site selected under the project. If additional environmental assessment is necessary, LGED will take necessary steps for carrying out the assessment (e.g., through hiring a Consultant). The cost of the environmental mitigation measures will be estimated and included in the bill of quantities. The civil engineering contractors will be assigned for implementation of these environmental mitigation measures. The social specialist of the DSC will carry out social screening, social impact assessment and prepare SMP and where applicable RAP for implementation before civil works construction.

308. The team leader of DSC will submit the overall quarterly and annual work plan and progress report to PMU (Project Director). Environmental and social assessment and mitigation measures will be reflected in the work plan and progress report in a separate section.

309. PMU will hire the services of the international/national consulting firm for the project monitoring and evaluation. The M&E consultants will report directly to the chief engineer, LGED to ensure their impartiality but their contract would be supervised and administered by the Project Management Office (Project Director). PMU will review and verify all the reports through M&E consultants and would take its recommendation with compliance to ESMF.

310. PMU with assistance from the M&E consultant will be designated to review all environmental and social screening, assessment, mitigation measures and costing. The M&E consultant will also oversee the implementation of the ESMF and the EMPs, SMP and RAP. For this purpose, M&E consultants will deploy a full time environmental specialist and a full time social specialist. The prime duty of the environmental engineer would be to:

- Review the screening and categorization of the sub-projects
- Review and update the EA, as required by the EMF
- Assist the XENs & AEs to supervise the implementation or the EMP by the contractors
- Ensure that construction activities are carried out in an environmentally sound and sustainable manner.

311. The M&E consultants will prepare a brief environmental supervision manual in the beginning of their contract to confirm the environmental supervision procedures and systems parties during the sub-project implementation. The manual will be continuously updated or modified throughout the implementation period so as to document the best operation/ construction environmental management process into LGED's works. The Environmental specialist of the M&E consultants will also provide technical assistance to the XENs and upazila Engineers and organize training sessions.

312. The Environmental Specialists and the relevant staff of the PMU and the Consultants will continue the routine monitoring of the compliance of EMP. A checklist for field monitoring is shown in the Annex-8.

313. PMU with help of Environment Specialist will submit the overall quarterly progress report on environment compliance to the WB. A format of quarterly monitoring report is shown in Annex-9.

314. The PMU, LGED will carry out monitoring of community engagement, social screening and impact assessment, the process of obtaining lands for sites, and preparation and implementation of SMP with assistance from the Senior Social Development Specialist and the local level staff.

315. The activities on environment and social management will be included in the project progress reports, will be reviewed under third party monitoring and also during periodic Bank missions.

## **12.2. Training Requirements**

316. The LGED has considerable experience in environmental management of a wide range of projects including the same nature of project ECRRP. However, training will assist them in properly overseeing the activities of the consultant engaged in environmental management of the MDSP and successful compliance of the ESMF. Also it is appeared that the officials at the District and Upazila level have limited or no exposure to environmental assessment and management. Since the field officials of

LGED under the guidance of consultant will be responsible for carrying out “environmental screening” and “analysis of alternatives”, as per guidelines of the ESMF, basic training on regulatory requirements, environmental impacts, and environmental assessment and management would greatly improve the capability of the LGED officials in carrying out their responsibilities under the MDSP. Training should be arranged in phase, i.e., areas where project activities would be initiated immediately would receive training first, others would gradually receive training as project work progresses. From logistic point of view, the trainings may be organized on a regional basis.

317. Also advanced training on environmental management and monitoring would be useful for engineers of PMO/ Environmental Unit of LGED in successfully implementing environmental management, following the ESMF. Table below summarizes the training requirements of the officials of LGED. It is also advised to provide the basic training for key personnel on regulatory requirements, environmental impacts, and environmental assessment and management in home or abroad.

**Table 12-1: Training requirements for environmental management of MDSP**

<b>Training Type/ Contents</b>	<b>Participants</b>	<b>Schedule</b>
General environmental awareness, regulatory requirements, EMF frameworks for MDSP, environmental impacts and mitigation, analysis of alternatives, environmental management	Field Engineer (at least one engineer from each Upazilla)	Prior to commencement of sub-project activities
Advanced training on environmental assessment, management (EMP, ECoP), monitoring, including details on EMF framework	Participants from: (a) PMO/ Environmental Unit of LGED	Immediately after project commencement
Social assessment, social management (SMP, RAP), monitoring and details on SMF	PMU/Field Engineers (assistant engineers and sociologist at the district offices and community organizer at the upazila level),	Immediately after project commencement
Refresher training on EMF and SMF	PMU and field level staff	Once every year

318. The local level staff of LGED will be provided with capacity building training on social development and safeguards compliance as per Bank policy on Involuntary Resettlement (OP 4.12), on Indigenous Peoples (OP 4.10) and other social development guidelines.

### **12.3. Access to Information**

319. The ESMF report and impact mitigation measures will be translated into Bengali language and disseminated locally. Copies of the report (both in English and Bengali) will be sent to all the concerned field offices of the LGED and will be made available to the public. The draft ESMF will also be uploaded in the website of LGED and in the Bank InfoShop before appraisal completion.

320. In addition a national workshop has been planned after the appraisal mission of the project to present the ESMF to the key stakeholders including field level staff of the implementing agencies (LGED), community representatives, NGOs, civil society etc. The comments and the findings from the workshop and other public will be reviewed and incorporated in the final report.

321. During the implementation stage of project, the subproject specific screening/assessment report will periodically be posted in the LGED website before the bidding process.

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## **ANNEXURES**



## Annex 1: An assessment Report on Completed Shelters under ECRRP

Name of the Shelter: Bhoroshakathi GPS cum CS, Upazila-Ujirpur, District-Barisal



### A. General

The cyclone shelter is 8 km away from the Upazila, and 25 km away from the district headquarters. The cyclone shelter is a three-storied building with RCC framed structure. The ground story with 10 feet high is kept free to allow surge water to pass. The 1<sup>st</sup> floor is kept for cattle with a ramp to move on it and fasten in the specified area. The 2nd floor is for human shelter during disaster period and school throughout the year. The construction work is complete.

The sub-project is surrounded by agricultural land in the north, school building and agriculture land in the east, agricultural land in the south and road in the west. Beneficiary population is 6400 in 1066 households.

The information based on the observation and consultations are given below,

- The deep tube well (DTW) has been sunk and the test water is safe for drinking purposes
- There is no water logging due to construction activities at the site
- There is no electricity in the school. Solar panel is procured and installed in the school
- There was no tree felling because of the sub-project intervention
- The building has been constructed in vacant lands of the existing school.
- Classes were shifted to KBG High school during piling of the building; hence the sound did not affect the students and the teachers.

Name of the Shelter: Dakhin Muradia GPS cum CS, Upazila-Dumki, District-Patuakhali



#### A. General

The school was established in 1942. The School cum cyclone centre is situated 8 km from the Dumki upazila and 6 kms from Patuakhali district. The school is a two-storied L-shaped building with a stair in the middle of the building (Option 5). Two Tube wells were sunk at the site but mostly river (adjacent to the school) water was used during construction.

The selected location for the new multipurpose cyclone shelter is at Dumki Upazila under Patuakhali district. The site is Dakkhin Muradia Government Primary School (GPS) cum Cyclone Shelter (NS 42). The school has paddy field in the north, play ground and road in the south, existing school in the east and an embankment (Beribandh) along a canal in the west. Beneficiary population for this shelter is 8500 in 950 households. Apparently, the quality of construction work was average. The work was completed in March 2013.

The information based on the observation and consultations are given below,

- Deep Tube Well (DTW) has been sunk and pumping water. Parameter for drinking water mainly Arsenic, Iron, manganese has been tested and the water is safe for drinking purposes.
- The solar panel has been installed.
- Quality of construction work moderate.
- Since the site is under off grid area of electricity, there is no electrical connection in the school.
- There was no tree felling because of the sub-project intervention
- Buildings has been constructed in vacant lands of the existing school.
- The sub-project did not create drainage congestion or water logging problem in the area.

Name of the Shelter: Char Kalaiya Abdur Rashid GPS cum CS, Upazila-Bauphal, District- Patuakhali



#### A. General

The cyclone shelter is 6 km from the Upazila, and 30 km from the district head quarters. The cyclone shelter has been designed for a two-story building. The shape of the building is a rectangular one. The ground story with 10 feet high is kept free to allow surge water to pass. The 1st floor is kept for human shelter during disaster period and school throughout the year. The 12 feet wide two stairs were situated at both end of the building with one landing in the middle with two flights at opposite direction.

The shelter is located at remote area connected with a rural road where construction of shelter cum school is necessary to face any natural disaster. Beneficiary population is 8550 in 1000 households.

The selected location for the new multipurpose cyclone shelters is at Bauphal Upazila under Patuakhali district. The site is at Char Kalaia Abdur Rashid Dakhil Madrasa cum CS (NS 44).

The information based on the observation and consultations are given below,

- Deep Tube Well (DTW) has been installed and pumping safe water. The old hand tube well was seen without body and handle. As reported, the pond water was used for construction works,
- No drainage or water logging due to construction activities was seen at the site,
- There is electricity in the Madrasa,
- Solar panel has not yet been installed
- The labor shed was abandoned but not yet completely demolished and site leveled
- 5 *Tal* and 6 teak *Chambal* trees were cut during construction. Now that the construction work is completed and the required numbers of specific varieties of tree species will be planted at the school boundaries

### **Overall Impact evaluation**

- Safe shelter in case of cyclones and other emergencies;
- Increase in employment opportunities;
- Children will enjoy better facilities and environment with consequent increase in enrollment of more children in the school for study;
- Building can be used as social infrastructure for community use (school, health centre, meeting places etc.);
- The provision of separate arrangement for refuge and toilet for the women will keep the environment of the shelters acceptable and friendly;
- Provision of water and adequate sanitation will safeguard the health hazards of the students;
- More evacuation routes during disaster, and access to improved transport.

### **Recommendations**

- Tree Plantation must be ensured in the school premises and the road sides in a planned way with suitable species for enhancement of environment and to save the road from soil erosion.
- All connectivity roads and evacuation routes should be properly maintained. Moreover, Shelter catchment area and effective evacuation route map should be developed for each shelter.



## Annex 2: Focus Group Discussion (FGD)

**Location:** Shakchar Jabbar, Lakshmipur Sadar, Lakshmipur

**Date:** 05/04/2014

Construction and Improvement of Multipurpose Shelters under MDSP

**T-4**

**COMMUNICATION AND PARTICIPATION PROGRAMME**

উন্নয়ন প্রস্তুতকৃত ঘূর্ণিঝড় আশ্রয়কেন্দ্র

আশ্রয়কেন্দ্রের নামঃ শাক্চার জব্বার লাক্ষ্মীপুর সদর উপজেলার শাক্চার জব্বার লাক্ষ্মীপুর বিদ্যালয় কোড নং ৪০৮০

মতবিনিময়ের তারিখঃ ০৫/০৪/২০১৪ স্থানঃ গ্রামঃ শাক্চার

ইউনিয়নঃ শাক্চার

উপজেলাঃ লক্ষ্মীপুর সদর

জেলাঃ লক্ষ্মীপুর

অংশগ্রহণকারীদের হাজিরা (পরিচয় ও স্বাক্ষর)

নাম	বয়স	পুরুষ/মহিলা	গ্রাম	স্বাক্ষর
১. আব্দুল্লাহ আল-বাকর	৪৬ বছর	পুরুষ	শাক্চার	আব্দুল্লাহ আল-বাকর
২. মু. হাফিজুর রহমান	৪৫ বছর	৥	শাক্চার	মু. হাফিজুর রহমান
৩. মোঃ হাফিজুর রহমান	৪৬	৥	শাক্চার	Moham. H. R.
৪. মুহাম্মদ আল-বাকর	৪৪	৥	শাক্চার	Muham. A. R.
৫. মোঃ জাহান আল-বাকর	৩৬	৥	শাক্চার	Moham. J. R.
৬. বোজান আল-বাকর	৩৬	মহিলা	শাক্চার	Bajan A. R.
৭. নাজমা আল-বাকর	২৫	৥	শাক্চার	Najma A. R.
৮. মোঃ আলমগীর হোসেন	৪২	পুরুষ	শাক্চার	Moham. A. H.
৯. মোঃ আলমগীর হোসেন	৪২	৥	শাক্চার	Moham. A. H.
১০. মোঃ আলমগীর হোসেন	৪৬	৥	শাক্চার	Moham. A. H.
১১. মোঃ আলমগীর হোসেন	২৪	৥	শাক্চার	Moham. A. H.
১২. মোঃ আলমগীর হোসেন	৩৬	৥	শাক্চার	Moham. A. H.
১৩. মোঃ আলমগীর হোসেন	৪৫	৥	শাক্চার	Moham. A. H.
১৪. মোঃ আলমগীর হোসেন	৪৬	৥	শাক্চার	Moham. A. H.

Construction and Improvement of Multipurpose Shelters under MDSP

T-4

COMMUNICATION AND PARTICIPATION PROGRAMME

উন্নয়ন প্রস্তুত্বিত ঘূর্ণিঝড় আশ্রয়কেন্দ্র

আশ্রয়কেন্দ্রের নামঃ সাকচর গ্রামে গ্রামীণ কমিউনিটি প্রায়শিক কোড নং

মতবিনিময়ের তারিখঃ ০৬/০৪/২০১৪ স্থানঃ গ্রামঃ সাকচর

ইউনিয়নঃ সাকচর

উপজেলাঃ নড়াইল

জেলাঃ নড়াইল

অংশগ্রহণকারীদের হাজিরা (পরিচয় ও স্বাক্ষর)

নাম	বয়স	পুরুষ/মহিলা	গ্রাম	স্বাক্ষর
১৬ আবদুল্লাহ আল কাসিম	৪৩	পুরুষ	সাকচর	
১৭ মু. মাহবুবুর রহমান	৪৫	"	সাকচর	
১৮ মোঃ মাহবুবুল আলম	৪৬	"	সাকচর	
১৯ মোঃ মোল্লাসীদ হোসেন	৪২	"	সাকচর	
২০ মোঃ মোল্লাসীদ হোসেন	৪৫	"	সাকচর	
২১ মোঃ মোল্লাসীদ হোসেন	৪৫	"	সাকচর	
২২ মোঃ মোল্লাসীদ হোসেন	৪৫	"	সাকচর	
২৩ মোঃ মোল্লাসীদ হোসেন	৪৫	"	সাকচর	
২৪ মোঃ মোল্লাসীদ হোসেন	৪৫	"	সাকচর	
২৫ মোঃ মোল্লাসীদ হোসেন	৪৫	"	সাকচর	
২৬ মোঃ মোল্লাসীদ হোসেন	৪৫	"	সাকচর	
২৭ মোঃ মোল্লাসীদ হোসেন	৪৫	"	সাকচর	
২৮ মোঃ মোল্লাসীদ হোসেন	৪৫	"	সাকচর	
২৯ মোঃ মোল্লাসীদ হোসেন	৪৫	"	সাকচর	
৩০ মোঃ মোল্লাসীদ হোসেন	৪৫	"	সাকচর	





**Photograph: ShakcharJabbar Master Community Primary School under Lakshmipur district**



**Photograph: Char ParbatiRahimia Government Primary School under Noakhali district.**

Location: Char Parbati Rahimia, Companigonj, Noakhali

Date: 06/04/2014

Construction and Improvement of Multipurpose Shelters under MDSP

T-4

COMMUNICATION AND PARTICIPATION PROGRAMME

নির্মাণ প্রস্তাবিত ঘূর্ণিঝড় আশ্রয়কেন্দ্র

আশ্রয়কেন্দ্রের নামঃ চর পার্বতী বহির্মিলন মসজিদ প্রাথমিক বিদ্যালয় রাস্তা কোড নং  
মহাশ্বেতনা খেলার মাঠ

মতবিনিময়ের তারিখঃ ০৬/০৪/২০১৪ স্থানঃ গ্রামঃ চর পার্বতী

ইউনিয়নঃ চর পার্বতী

উপজেলাঃ কোমলানী নগর

জেলাঃ নোয়াখালী

অংশগ্রহণকারীদের হাজিরা (পরিচয় ও স্বাক্ষর)

(৫০০)

নাম	বয়স	পুরুষ/মহিলা	গ্রাম	স্বাক্ষর
১ Baidul -	৪০	পুরুষ	চর পার্বতী	Baidul -
২ আবু হাফেজ	৫০	"	চর পার্বতী	আবু হাফেজ
৩া ওয়াক্কুল হুসাইন	৫৩	"	"	ওয়াক্কুল হুসাইন
৪। Parwar haan	৭৭	"	"	Parwar haan
৫। রতন কুমার মজুমদার	৭০	"	চর পার্বতী	রতন কুমার
৬ কামরুন নাহার	৩৫	মহিলা	চর পার্বতী	কামরুন নাহার
৭ প্রবীণ বানী হুজুরদার	৭৭	"	চর পার্বতী	প্রবীণ বানী
৮ কামরুন নাহার	৩৬	"	চর পার্বতী	কামরুন নাহার
৯ শ্রীঃ নজরুল ইসলাম	৩০	পুরুষ	চর পার্বতী	শ্রীঃ নজরুল ইসলাম
১০ প্রবীণ হুজুরদার	৩১	"	চর পার্বতী	প্রবীণ হুজুরদার
১১ আবু হাফেজ	১৭৩২	পুরুষ	চর পার্বতী	আবু হাফেজ
১২ আবু হাফেজ	২০	পুরুষ	চর পার্বতী	আবু হাফেজ
১৬ নাসির	২০	পুরুষ	চর পার্বতী	নাসির
১৮ মেহদী হাফিজ	২৫	পুরুষ	চর পার্বতী	মেহদী হাফিজ



WB Credit No. 4507-BD: Emergency 2007 Cyclone Recovery and Restoration Project  
LGED Component: Construction and Improvement of Multipurpose Shelters

T-4

COMMUNICATION AND PARTICIPATION PROGRAMME

নির্মাণ প্রস্তাবিত ঘূর্ণিঝড় আশ্রয়কেন্দ্র

আশ্রয়কেন্দ্রের নামঃ চব পার্বতী বহির্মহা ময়দারী মাদ্যামিক কোড নং-----  
১৮৮৮৮৮

মতবিনিময়ের তারিখঃ ০৬/০৮/২০১৮ স্থানঃ গ্রাম. চব পার্বতী

ইউনিয়নঃ চব পার্বতী

উপজেলাঃ কোমলানীসাত্ত

জেলাঃ নোয়াখালী

অংশগ্রহণকারীদের হাজিরা (পরিচয় ও স্বাক্ষর)

	নাম	বয়স	পুরুষ/মহিলা	গ্রাম	স্বাক্ষর	(মোবাইল)
১৫/	মহম্মদুল হক	৪০	✓ পুরুষ	চব পার্বতী	মহম্মদুল হক	০১৮৮
১৬/	আবদুল হক	৩৩	✓ "	চব পার্বতী	আবদুল হক	০১৮৮
১৭/	ফারুক হক	৫৮	✓ "	চব পার্বতী	ফারুক হক	০১৮৮
১৮/	মোহাম্মদ আলী হক		✓ "			
১৯/	মোহাম্মদ হোসেন		✓ "			
২০/	কাজিম উদ্দিন হোসেন	৩২	✓ "	চব পার্বতী	কাজিম উদ্দিন হোসেন	০১৮৮
২১/	ফারুক হোসেন	২৫	✓ "	চব পার্বতী	ফারুক হোসেন	০১৮৮
২২/	মোহাম্মদ হোসেন	৪৫	✓ "	চব পার্বতী	মোহাম্মদ হোসেন	০১৮৮

### Annex 3: Environmental Screening Format

#### General Information

Name of the school/union/Upazila/District :

Who owns the land :

Brief Description of site location :

Date of public consultation and number of attendance :

Name and mobile number of Head Master of the school :

Screening Questions	Yes	No	Scale of Impact			Remarks (The following questions need to be answered)
			High	Medium	Low	
Adjacent to or within any of the environmentally sensitive areas?						What type of area? How far?
Lead to any agricultural land loss or crop loss?						Where is the agricultural land? What type of crop is grown and mention about the season, amount of production
Involve any land acquisition and involuntary resettlement						Give the history and owner ship of the land
Destruction of trees and vegetation						how many trees around? How many will be cut? Type of vegetation and tree?
Impact on pond or fish						How far is the pond? How many? What species? How will be affected?
Effects on surface water /groundwater quality						How far is the surface water body? What is the depth of ground water
Impact on drainage or create water logging in the area						What is the existing drainage condition?
Traffic disturbances due to construction material transport and wastes?						Is there any road? How many and what type of vehicles move everyday?
Increased noise due to construction activities or movement of materials						Is there any other noise now?
Negative effects on neighborhood or community						Has the community been discussed?
Degradation or disturbance of historical or culturally important sites (mosque, graveyards, monuments etc.)						What and how far?
Impediments to movements of people and livestock						
Produce health hazard from generated air/dust pollution from machineries						
Disturbance to the student to take the lesson in the classroom						How far is the existing school?

---

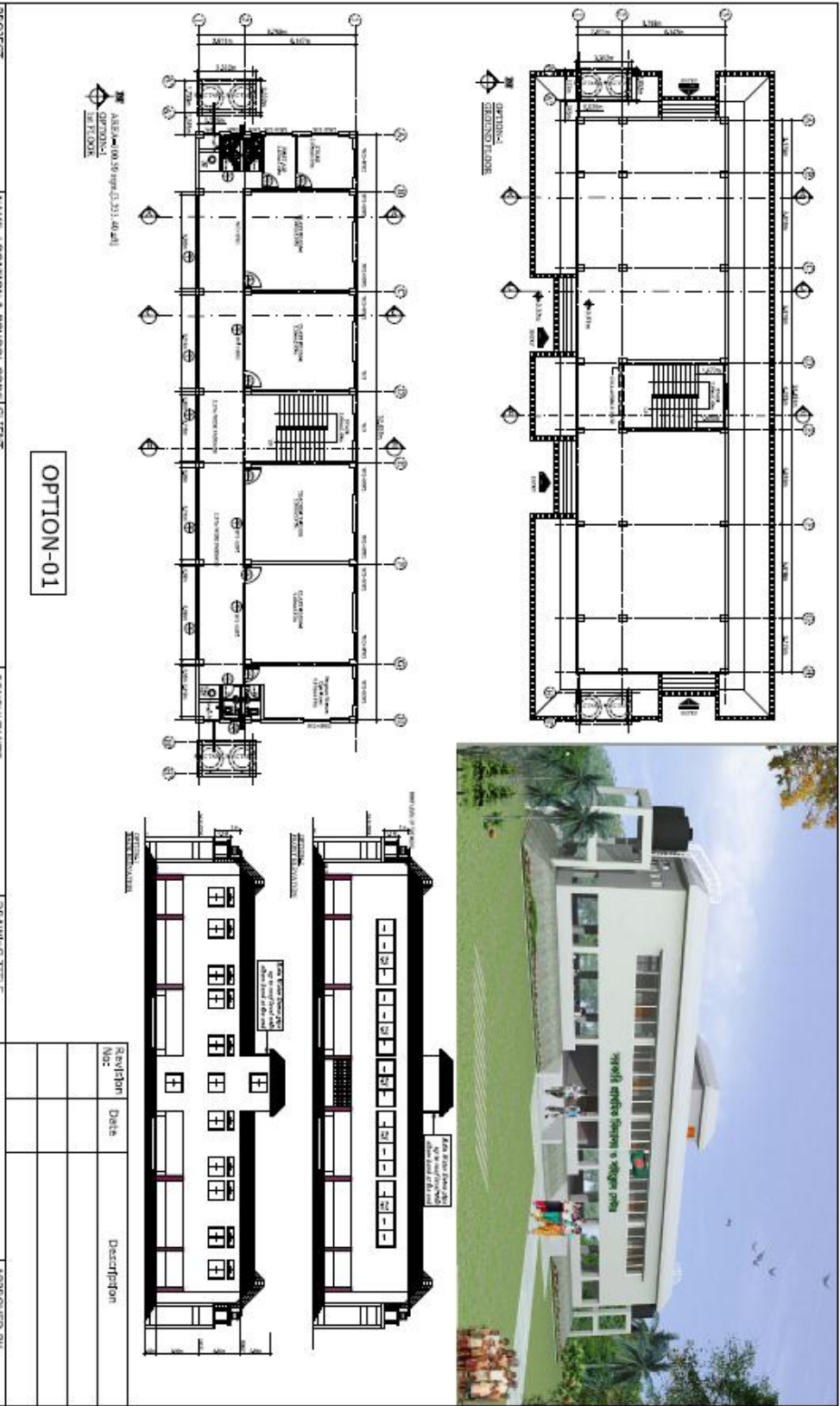
Direct or indirect hazards to student for  
walking in the school campus by  
construction activities

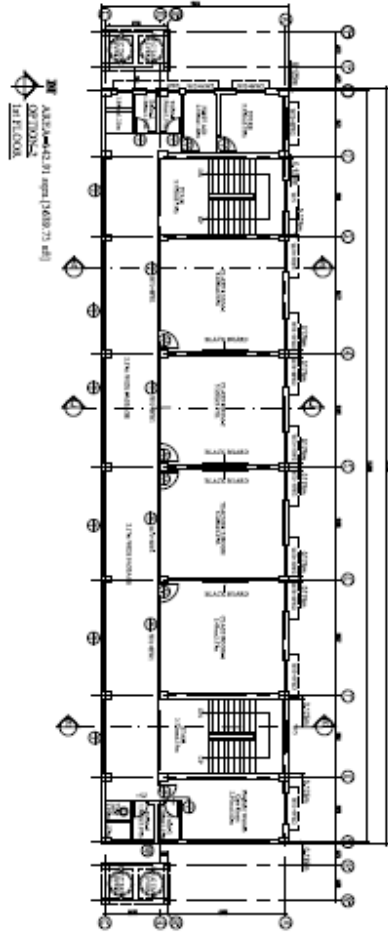
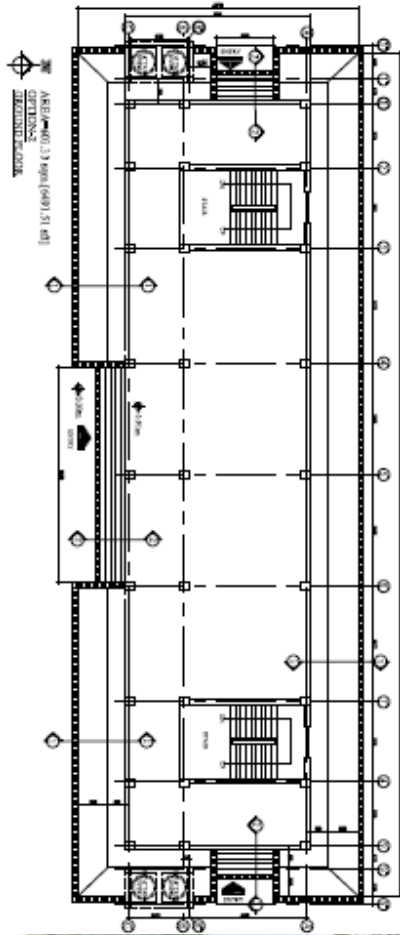
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Impact due to on site or off-site disposal  
of construction waste or household  
waste (from labor camp)

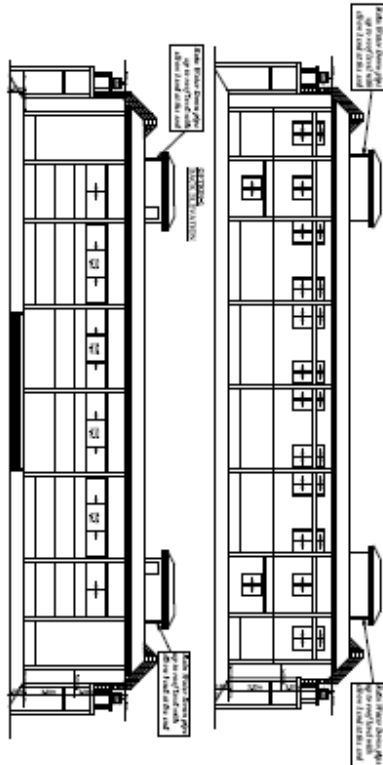
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Annex 4: Design options of Cyclone Shelter

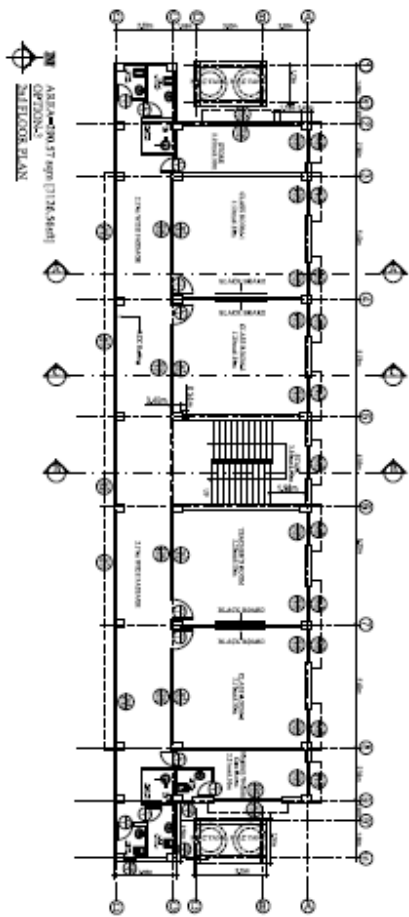
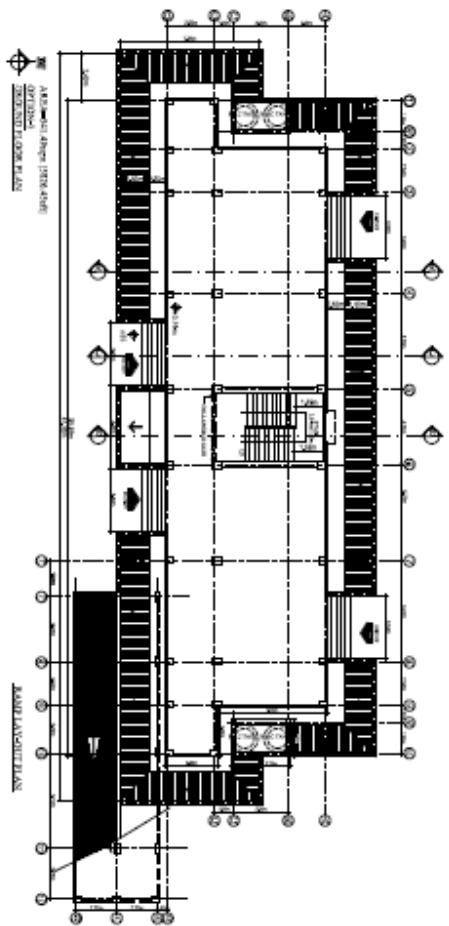




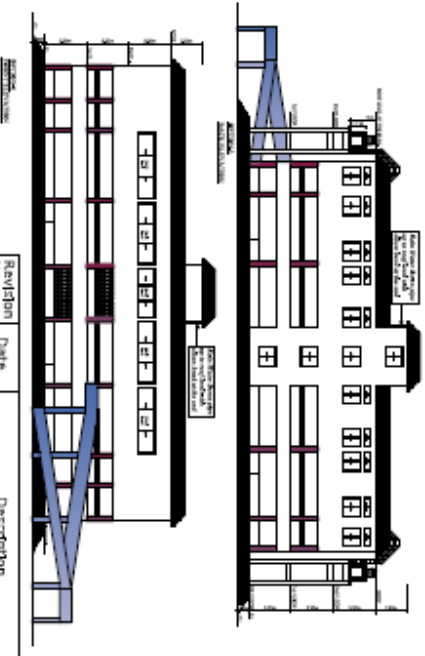
OPTION-02



Rev/plan	Date	Description
1/01		

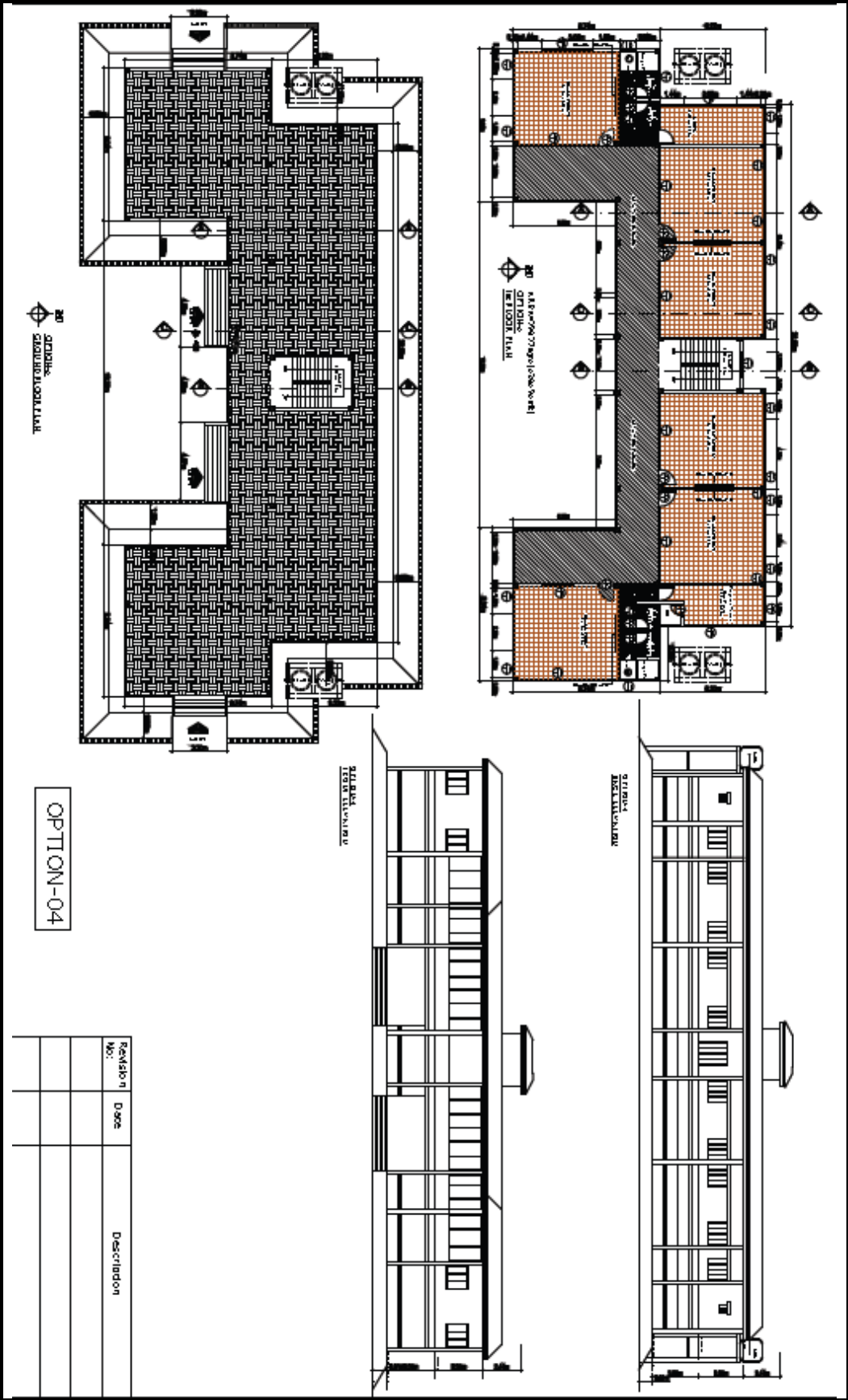


OPTION-03



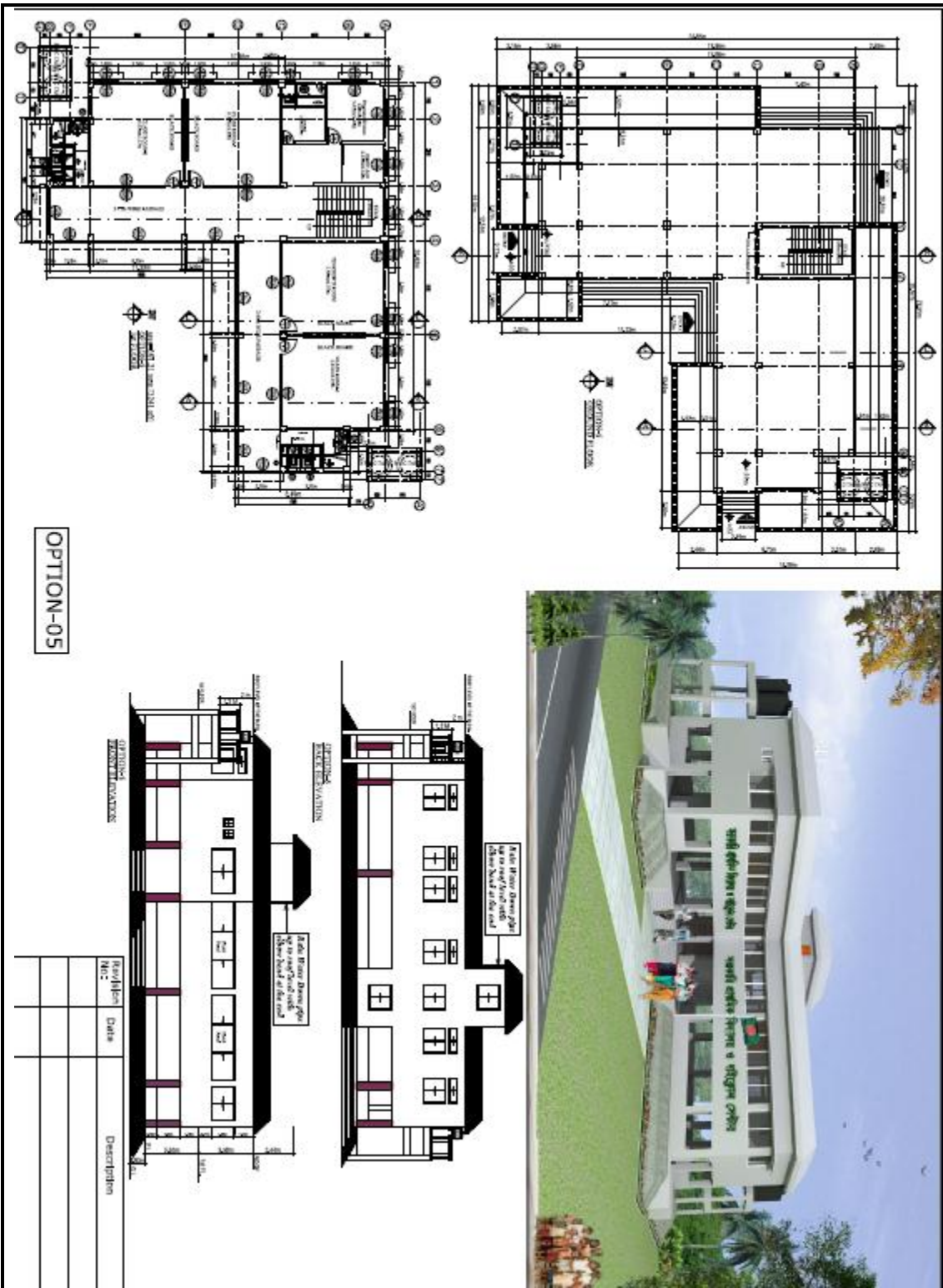
Revision No.	Date	Description





OPTION-04

Revision No.	Date	Description





## **Annex 5: Environmental Code of Practice (ECoP)**

The Environmental Code of Practice (ECoP) is a guideline for reduce or eliminate environment risk due to various activities associated with different types of sub-projects considered in the MDSP.

### **ECoP 1.0: Planning and Design Phases of a Project**

#### **1.1 General**

This code of practice details the factors to be considered during project preparation to avoid/address environmental concerns through modifications in project design and incorporation of mitigation measures.

#### **1.2 Finalization of Alignment/Project Location**

- Adequate consultations with the communities to identify the concerns and preferences need to be taken up during selection of the location of subproject.
- The proposed location of shelter and the connecting road shall conform to the natural topography as far as possible to avoid excessive cut and fill.
- Consultations with the local communities are to be conducted to obtain their suggestions and incorporate their concerns to address the potential environmental impacts.
- In case of flood prone areas and/or areas with very flat slopes, hydrological surveys have to be conducted before alignment finalization.

#### **1.3 Compliance to Legal Requirements**

The bid document shall include the various applicable clearances pertaining to environmental management and shall contain the necessary procedures for compliance of the same.

#### **1.5 Cost Estimation**

Some activities included in ECOP 1.0 have certain monetary involvement. These activities are outlined below:

1. There will be one Focus Group Discussion (FGD), with at least 15 participants from different communities of the society, for adequate consultations to identify the concerns and preferences related to a particular infrastructure development project.
2. One surveyor will carry out a Key Informant Information (KII) of at least 50 participants from different communities of the society affected by the infrastructure development project.
3. One surveyor will carry out a hydrological survey before finalizing alignments and/or reduced levels for infrastructure development projects in a flood prone area and/or with very flat slopes.

### **ECoP 2.0: Site Preparation**

#### **2.1 General**

The preparation of site for construction involves:

- i. Marking and clearance of the required project area of all encroachments prior to mobilization of Contractor;
- ii. Informing the local community about construction schedule; and
- iii. Site preparation by the contractor prior to commencement of construction. Scope of this ECOP includes only the measures to address environmental concerns expected during the site preparation.

#### **2.3 Site Preparation Activities by the Contractor**

- The contractor shall submit the schedules and methods of operations for various items during the construction operations.
- The clearance of site shall involve the removal of all materials such as trees, bushes, shrubs, stumps, roots, grass, weeds, part of topsoil and rubbish. Towards this end, the Contractor shall adopt the following measures:
  - To minimize the adverse impact on flora and vegetation, only ground cover/shrubs that impinge directly on the permanent works shall be removed.
  - In locations where erosion or sedimentation is likely to be a problem, clearing and grubbing operations should be so scheduled and performed that grading operations and permanent erosion and sedimentation control features can follow immediately, if the project conditions permit.
  - The disposal of wastes shall be in accordance with the provisions of ECoP 5.0, "Waste Management".
  - All regulatory clearances shall be obtained before actual start of work.

### **ECoP 3.0: Construction Camps**

#### **3.1 General**

ECoP 3.0 provides guidelines on the selection, development, maintenance and restoration of construction camp sites in order to avoid or mitigate against significant adverse environmental effects, both transient and permanent.

#### **3.2 Construction Camp Siting**

During planning of the works consideration shall be given to the location of construction camps for the sub-project. Construction camps and areas identified that may be suitable for the development of such camps shall be raised in consultation with the Engineer. Areas those are not suitable for reasons such as environmental, cultural or social sensitivity shall also be identified. Wherever possible, construction camps shall be planned in areas that will have minimal adverse environmental effects. In identifying such areas particular care shall be taken to evaluate the adverse affects of water, noise and air pollution, which, although transient, will preclude the use of some areas as construction camp sites.

#### **3.3 Construction Camp Location**

Construction camp sites shall be located such that permanent adverse environmental effects can be avoided or mitigated against and transient adverse environmental effects are minimized. Camp shall not be occupied any classroom of existing school building. Camp sites shall not be located in areas identified during the planning stage as unsuitable for such use. The site or sites shall be selected such that mitigation measures stipulated in this ECoP can be implemented with reasonable facility.

#### **3.4 Private Land**

Where construction camps are to be located on land outside the road reserve the contractor shall obtain the approval of the landowner to establish the camp site on such land and pay agreed compensation as per the *Resettlement and Rehabilitation Framework*. Environmental protection measures established by this ECoP shall apply to all land regardless of ownership.

#### **3.5 Construction Camp Facilities**

The construction camp shall be provided with the following minimum facilities:

- A perimeter security fence at least 1.5m in height constructed from appropriate materials.

- Ablution block with a minimum of one water closet toilet or Pota-cabin, one urinal and one shower for personnel engaged either permanently or temporarily on the project. Pota-cabins or separate toilet and wash facilities shall be provided for male and female employees.
- A sickbay and first aid station.
- Areas for the storage of fuel or lubricants and for a maintenance workshop. Such an area shall be bounded and have a compacted/impervious floor to prevent the escape of accidental spillage of fuel and or lubricants from the site. Surface water drainage from bounded areas shall be discharged through purpose designed and constructed oil traps. Empty fuel or oil drums may not be stored on site.
- Storm water drainage system to discharge all surface run off from the camp site to a silt retention pond which shall be sized to provide a minimum of 20 minutes retention for storm water flow from the whole site that will be generated by a 20 year return period rainfall having a duration of at least 15 minutes. The run-off coefficient to be used in the calculation of the silt pond volume shall be 0.9. Silt ponds shall be maintained in an efficient condition for use throughout the construction period with trapped silt and soil particles being regularly removed and transported and placed in waste material disposal areas as per ECoP7.0.
- All discharge from the silt retention pond shall be channeled to discharge to natural water via a grassed swale at least 10 meters in length with suitable longitudinal gradient.
- All camp facilities shall be maintained in a safe clean and or appropriate condition throughout the construction period.

#### *3.5.1 Construction Camp Development Plan*

A development plan of the construction camp shall be prepared describing the following:

- Perimeter fence and lockable gates
- Workshop
- Accommodation
- Ablutions
- Water supply
- Wastewater disposal system
- Bounded fuel storage area
- Proposed power supply
- Proposed all weather-surfaced areas.

#### **3.6 Site Restoration**

At the completion of the construction work, all construction camp facilities shall be dismantled and removed from the site and the whole site restored to a similar condition to that prior to the commencement of the works or to a condition agreed to with the owner of the land.

All oil or fuel contaminated soil shall be removed from the site and transported and buried in waste soil disposal areas.

### **ECoP 4.0: Borrow Areas**

#### **4.1 General**

Embankment or filling material is to be procured from borrow areas designated for the purpose. The scope of this ECoP extends to measures that need to be incorporated during borrow area identification, material extraction and rehabilitation with regard to environment management.

#### 4.2 Pre-construction Stage

The contractor shall identify the borrow area locations in consultation with the owners, after assessing the suitability of the material. The suitable sites shall be selected and finalized in consultation with the LGED.

#### 4.3 Construction Stage

The contractor should adopt the following precautionary measures to minimize any adverse impacts on the environment:

- i. Borrow pits situated less than 0.5 km (if unavoidable) from villages and settlements should not be dug for more than 30 cm after removing 15cm of topsoil and should be drained.
- ii. The Contractor shall maintain erosion and drainage control in the vicinity of all borrow pits and make sure that surface drains do not affect the adjacent land or future reclamation.
- iii. In case the borrow pit is on agricultural land, the depth of borrow pits shall not exceed 45 cm and may be dug out to a depth of not more than 30 cm after stripping the 15 cm top soil aside.
- iv. In case of riverside, borrow pit should be located not less than 15m from the toe of the bank, distance depending on the magnitude and duration of flood to be withstood.

#### 4.4 Post Construction Stage

It needs to be ensured that all reclamation has been carried out in accordance with the restoration plan. Certificate of Completion of Reclamation is to be obtained by the Contractor from the landowner that “the land is restored to his satisfaction”.

### **ECOP 5.0: Waste Management**

#### 5.1 General

This code of practice describes procedures for handling, reuse and disposal of waste materials during construction. The waste materials generated can be classified into

- i. Construction Waste and
- ii. Domestic waste.

#### 5.2 Pre-construction Stage

- The contractor shall identify the activities during construction that have the potential to generate waste and work out measures for the same in the construction schedule.
- The Contractor shall educate his workforce on issues related to disposal of waste, the location of disposal site as well as the specific requirement for the management of these sites.

#### 5.3 Construction Stage

- The contractor shall either re-use or dispose the waste generated during construction depending upon the nature of waste.
- The contractor shall dispose off wastes that could not be re-used safely.
- The waste management practices adopted by the Contractor shall be reviewed by the LGED during the progress of construction.

#### 5.4 Post Construction Stage

- After decommissioning of construction sites, the Contractor shall hand over the site after clearing the site of all debris/wastes to the LGED.
- In case of disposal of wastes on private land, certificate of Completion of Reclamation is to be obtained by the Contractor from the landowner that “the land is restored to his satisfaction”.

## **ECOP 6.0: Water Bodies**

### **6.1 General**

Water bodies may be impacted when the infrastructure development project activities are adjacent to it or the runoff to the water body is affected by change of drainage pattern due to construction of embankment. The following activities are likely to have an adverse impact on the ecology of the area:

- i. Earth moving
- ii. Removal of vegetation
- iii. Waste disposal from construction works

### **6.2 Pre-Construction Stage**

Following are the Contractor's responsibilities:

- i. Restriction on use of water during construction, if any, should be intimated to the community in advance.
- ii. Alternate access to the water body is to be provided in case there is interruption to use of exiting access.
- iii. If the water body affected is a drinking water source for a habitation, alternate sources of water are to be provided to the users during the period for which its use is affected.

### **6.3 Construction Stage**

- It should be ensured by the contractor that the runoff from construction site entering the water body is generally free from sediments.
- Silt/sediment should be collected and stockpiled for possible reuse as surfacing of slopes where they have to be re-vegetated.
- Cutting of embankment reduces the water retention capacity and also weakens it, hence:
  - i. The contractor should ensure that the decrease in water retention should not lead to flooding of the construction site and surroundings causing submergence and interruption to construction activities.
  - ii. Any perceived risks of embankment failure and consequent loss/damage to the property shall be assessed and the contractor should undertake necessary precautions as provision of toe protection, erosion protection, sealing of cracks in embankments. Failure to do so and consequences arising out of embankment failure shall be the responsibility of the contractor. The LGED shall monitor regularly whether safe construction practices near water bodies are being followed.
- Alternate drain inlets and outlets shall be provided in the event of closure of existing drainage channels of the water body.
- Movement of workforce shall be restricted around the water body, and no waste from construction sites shall be disposed into it.

### **6.4 Post Construction Stage**

- The zones of the water body have to be left clean and tidy with the completion of construction.
- Engineers of the LGED will check if drainage channels of adequate capacity have been provided for the impacted water body.

## **ECoP 7.0: Water Qualities**

### **7.1 General**

- Small-scale road construction, small-scale drainage, and small-scale embankment construction may affect the aquatic environment, by lowering or raising water levels, and decreasing water quality.
- Deterioration of water quality and disturbance of aquatic environment by lowering or rising of water levels.

### **7.2 Pre-Construction Stage**

Following measures are to be undertaken by the contractor prior to the commencement of construction:

- Base line data of the water quality is necessary.
- In addition, the availability of enough water during the lean season needs to be assessed as part of the baseline data collection.

### **7.3 Construction Phase**

- Improper disposal of solid and liquid waste including excreta generate from sites will pollute the water quality and proper prevention measure should be taken.
- Wastewater disposal, sanitation/latrines may have positive cumulative effects on human health, but if not improperly implemented may affect ground and surface and ground water quality; the contractor should give proper attention on it during construction stage.
- Protect water bodies from sediment loads by silt screen or bubble curtains or other barriers.

### **7.4 Post Construction**

- Inspection of water quality shall be done regularly.

## **ECoP 8.0: Drainage**

### **8.1 General**

- Drainage is designed for and installed on roads to direct surface or subsurface flow away to a safe outfall without damage to the structure, adjoining property or agricultural fields.
- A road with good drainage is a good road. Inadequate and faulty drainage arrangements result in obstruction to natural drainage pattern. Provision of cross-drainage and longitudinal drainage increases the life of the road and consequently reduces water logging and related environmental impacts.
- The present code seeks to address the environmental concerns related to drainage aspects during different stages of the project execution.

### **8.2 Pre-Construction Stage**

- Following measures are to be undertaken by the contractor prior to the commencement of construction:
  - i. The downstream as well as upstream user shall be informed one month in advance
  - ii. The contractor shall schedule the activities based on the nature of flow in the stream.
  - iii. The contractor should inform the concerned departments about the scheduling of work. This shall form part of the overall scheduling of the civil works to be approved by LGED.

- iv. Erosion and sediment control devices, if site conditions so warrant, are to be installed prior to the start of the civil works.
- v. All the safety/warning signs are to be installed by the contractor before start of construction
- In case of utilization of water from the stream, for the construction, the contractor has to take the consent from the concerned department.

### 8.3 Construction Phase

- Drainage structures at construction site shall be provided at the earliest to ensure proper compaction
- In hill areas sub-surface drains, if required, shall be provided immediately after cutting the slopes and forming the roadbed (sub grade).
- Safety devices and flood warning signs to be erected while working over streams and canals.

### 8.4 Post Construction

- Inspection and cleaning of drain shall be done regularly to remove any debris or vegetative growth that may interrupt the flow.
- Temporary structures constructed during construction shall be removed before handing over to ensure free flow through the channels.

## **ECOP 9: Public Health and Safety**

### 9.1 General

The safety and health of the public is impacted due to the hazards created during the construction period. This code of practice describes the measures that need to be taken to mitigate the impacts.

### 9.2 Pre-construction Stage

- In order to incorporate public health and safety concerns, the LGED and the Contractor shall disseminate the following information to the community:
  - i. Location of subproject activities,
  - ii. Borrow areas,
  - iii. Extent of work
  - iv. Time of construction
  - v. Involvement of local labors in the road construction
  - vi. Health issues - exposure to dust, communicable diseases etc.

### 9.3 Construction Stage

- The Contractor shall schedule the construction activities taking into consideration factors such as:
  - i. Sowing of crops
  - ii. Harvesting
  - iii. Local hindrances such as festivals etc.
  - iv. Availability of labor during particular periods
- Proper safety/warning signs are to be installed by the contractor to inform the public of potential health and safety hazard situations during the construction phase in the vicinity of the project.
- The LGED shall carry out periodic inspections in order to ensure that all the measures are being undertaken as per this ECoP.

### 9.3 Post-construction Stage

The construction site shall be cleaned of all debris, scrap materials and machinery on completion of construction for the safety of public and users.

## **ECOP 10.0: Material Storage, Transport and Handling**

### 10.1 General

Activities related to materials storage, handling, and transfer that are considered to potentially have negative environmental effects include:

- Transportation, storage, handling and of construction materials;
- Storage, handling, and transfer of petroleum, oil, and lubricant (POL) products;
- Application of asphaltic concrete and asphalt binder;
- Storage and handling of hazardous materials other than POL products; and
- Storage and application of road salt and sand.

Some materials used during implementation of projects associated with MDSP may have potentially hazardous effects on the environment if not properly stored and handled.

### 10.2 Transportation, Handling and Storage of Cement and Aggregates

- The Contractor shall be responsible for ensuring that all trucks and carriers are clean and dry prior to loading them with cement or aggregates. All trucks and carriers for transporting cement/aggregates shall be equipped with weather proof closures on all openings.
- All cement/aggregates that will be brought to the site shall be kept free from contact with deleterious matter.
- All cement/aggregates shall be placed on impervious mat spread over the storage area to prevent direct contamination of top soil in the storage area. Stockpiling of cement/aggregates should be limited to minimum space and should be covered with weatherproof closures.
- Stockpiles shall be built up in horizontal or gently sloping layers. Overlap of different materials shall be prevented by suitable walls of ample distance between stockpiles.
- The Engineer shall approve the site for the storage of all aggregates.
- The Engineer shall approve the methods of handling aggregates and the equipment used.

10.3 Environmental Concerns with Materials used for Construction and Maintenance of Infrastructure Development Projects. Concerns are related to accidental releases into the environment, such as spills, refueling losses, and leakage from equipment that could result in contamination of soil, groundwater, or surface waters.

Groundwater may transport the contaminants off-site to down-gradient aquifers or water supplies, or discharge them into surface waters. Therefore, release of potential contaminants on the ground surface could have significant environmental impacts that could ruin groundwater (well supplies).

#### *10.3.1 Petroleum, Oil, and Lubricants*

The toxic effect of a petroleum product in the aquatic environment varies considerably due to the different chemical composition of each petroleum product. The toxicity of petroleum products is related largely to its solubility in water. Petroleum pollution from accidental spills may affect aquatic birds, fish and vegetation. The effect of oil on birds' feathers (loss of insulation) is an important cause of death. Oil polluting the water may also be toxic to birds if they ingest it. Plants in marshes or in wetlands (haor, baor, ponds and others) and steams may die off for short periods. Long-term impacts of spilled



petroleum products are associated with the portion, which sinks and becomes incorporated into bottom sediments. This causes the petroleum products to degrade very slowly and they may persist for many years.

Petroleum products can stick to the gills of fish and interfere with normal respiration. Under relatively mild pollution, fish may produce mucus as a defensive mechanism to remove the oil. However, in heavy pollution, this mechanism is inefficient and the oil tends to accumulate on the gills and smother the fish. Petroleum products contain soluble materials, which can be ingested by fish. The flavor of the fish flesh may, therefore, become tainted, or if ingested in enough quantity, may become lethal. Groundwater sources contaminated with petroleum products may have potentially toxic effects on consumers.

#### *10.3.2 Asphalt Products*

Environmental concerns with tack asphalt binder, and asphaltic concrete are also related to the hydrocarbon components, which are toxic to aquatic life, wildlife, and humans. As mentioned above, if these materials sink to the bottom, they may destroy the fish's source of food supply and smother the eggs or emerging fry.

#### *10.3.3 Other Hazardous Materials*

The following hazardous materials are used in structures construction or maintenance activities and have potential environmental concerns:

- Paints;
- Solvents; and
- Fresh concrete and admixtures.

Paint materials, which are lead – or oil-based, may affect aquatic life if significant amounts enter a watercourse. Specific concern exists with lead, as this compound may have a direct toxic effect on young fish. Toxins can accumulate over time in aquatic fish, bugs, and plants. Upon consumption by animals such as birds and small mammals, some metals could be transferred to the consumer and affect their health.

Some solvents used for cleaning purposes may contain components, which are toxic to aquatic life, wildlife, and humans. If solvents enter a watercourse/water supply, and significant concentrations occur in the water, this could be harmful to users.

Concrete, which is typically made up of aggregates, cement, water, and possibly admixtures, is very alkaline because of its calcium (lime) content. If concrete enters a watercourse in significant amounts, the pH of the water may be affected locally over the short-term. If the pH of the receiving water is altered, this may cause physiological stress in fish, which may result in death.

### **ECOP 11.0: Vegetation Management**

#### **13.1 General**

- Besides improving aesthetics and ecology of the area, the vegetation provide fuel wood, act as noise barriers, provide visual screen for sensitive areas and also generate revenue by sale of its produce.
- This code of practice elaborates on the approach towards planting trees. Emphasis has been laid on a greater involvement of communities in planting and maintenance of trees.

#### **13.2 Project Planning and Design Stage**

- Tree felling, if unavoidable, shall be done only after compensatory plantation of at least three saplings for every tree cut is done.

- The species shall be identified in consultation with officials of forest department/local community, giving due importance to local flora. It is recommended to plant mixed species in case of both avenue or cluster plantation.
- The plantation strategy shall suggest the planting of fruit bearing trees and other suitable trees.

### 13.3 Post-construction Stage

- The project proponents would take up the planting of fruit bearing and other suitable trees, on both sides of the roads or other infrastructure development projects location from their own funds.
- Watering of trees during the initial period of two to three years shall be the responsibility of the LGED or the agency designated by it.

### **The Cost Estimation of ECoPs**

Some activities included in ECoPs have certain monetary involvement. The generic method of determining the cost of the ECoP is outlined below:

1. The Engineer of the ULB will carry out a survey of the intended project site to identify appropriate locations and also identify sites unsuitable in terms of topography, proximity to water courses, and environmental sensitive areas such as forests, wetlands, or other sensitive area.
2. Survey and monitoring works must be carried out, by Engineer appointed by the ULB authorities, throughout the pre-construction, construction, and post-construction phases to make sure the items and specifications (e.g low cost sanitation facilities, top soil management, waste disposal, tree plantation, storm water drainage etc) provided in this ECoP are properly addressed and estimated the cost.

## **Annex 6: Chance Find Procedures**

**(Ref: The World Bank Operational Manual, 1999 OP4.11)**

Works could impact sites of social, sacred, religious, or heritage value. "Chance find" procedures would apply when those sites are identified during the design phase or during the actual construction period and the related activity will not be eligible for financing under the project.

- (1) Cultural property includes monuments, structures, works of art, or sites of significant points of view, and are defined as sites and structures having archaeological, historical, architectural, or religious significance, and natural sites with cultural values. This includes cemeteries, graveyards and graves.
- (2) The list of negative subproject attributes which would make a subproject ineligible for support includes any activity that would adversely impact cultural property.
- (3) In the event of finding of properties of cultural value during construction, the following procedures for identification, protection from theft, and treatment of discovered artifacts should be followed and included in standard bidding document.
  - (a) Stop the construction activities in the area of the chance find;
  - (b) Delineate the discovered site or area;
  - (c) Secure the site to prevent any damage or loss of removable objects.
  - (d) Notify the supervisory Engineer who in turn will notify the responsible local authorities;
  - (e) Responsible local authorities and the relevant Ministry would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures.
  - (f) Decisions on how to handle the finding shall be taken by the responsible authorities and the relevant Ministry. This could include changes in the layout (such as when finding an irremovable remain of cultural or archeological importance), conservation, restoration and salvage.
  - (g) Implementation of the authority decision concerning the management of the finding shall be communicated in writing by the relevant Ministry.
  - (h) Construction work could resume only after permission is given from the responsible local authorities and the relevant Ministry concerning safeguard of the heritage.
- (4) These procedures must be referred to as standard provisions in construction contracts. During project supervision, the Site Engineer shall monitor the above regulations relating to the treatment of any chance find encountered.
- (5) Relevant findings will be recorded in World Bank Supervision Reports and Implementation Completion Reports will assess the overall effectiveness of the project's cultural property mitigation, management, and activities, as appropriate.

## Annex 7: Typical Bill of Quantities (BOQ) for Environmental Works

Sl	Description	Shelter No.	Quantity	Unit	Unit Rate		Total Amount (in Tk.)
					In figure (Taka)	In words (Taka)	
<b><u>WORKS- for Environmental Safeguard (All as per Specifications)</u></b>							
1	Supply of First Aid box with standard contents ( sterile gauze, adhesive tape, adhesive bandages, antiseptic, wipes-Dettol/Savlon, Haxasol, soap, antibiotic cream, scissors, thermometer, plastic gloves (at least 2 pairs), flashlight, Water purifier tablet, Common disaster recovery medicines.)						
2	Site Cleaning, dust control, solid and organic waste management, temporary fencing at construction area, site levelling, dressing etc.						
3	Tree plantation around the shelter and road including maintenance for 2 years as required.						
4	Provide PPE (hand gloves, spectacles for eye protection, helmets, safety shoes etc), supply drinking water and arrange accommodation with proper sanitation facilities to the labors.						
5	Find the depth of ground water level at least two location of the site to meet the requirement of all parameters for drinking water standard.						

## Annex 8: Environmental Monitoring Checklist for Cyclone Shelter

Monitor(s) Name:

Contract No & Location:

Contractor Name:

Monitoring Dates:

Issues	Potential Impact	Mitigation Measures	Complies(Yes / No) If yes description on measures taken	Instruction (if any)
Surface and ground water pollution	Contamination surface water or ground water table	Ensure wastes are disposed properly away from site.		
		Ensure septic tanks and soak wells are of proper design		
Air/Dust pollution	Health hazard to school children and residents	School should be temporarily moved during dismantling and rehabilitation		
		Cost of temporary shifting be included		
		Watering of dusty roads; sprinkling and Covering stockpiles		
Noise pollution	Hearing hazards to school children and residents	School should be temporarily moved during dismantling and rehabilitation		
		Cost of temporary shifting be included		
		Scheduling of transportation not to disturb the community		
		Speed reduction provision in critical areas and turns		
		The machineries should have silencing devises		
Waste disposal/ Management	Contamination of water	Wastes and debris are disposed properly		
		Construction debris must be stockpiled and removed to a site.		
		Do not drop or expose any debris while transporting.		
Soil erosion	Land slide/ battered slope, rain-cut, absence of vegetation	Ensure, layer to layer compaction, soil stabilization measure.		
		Re-vegetable and restore disturbed soil.		
		Appropriate designing of slopes to prevent slumping, slippage and erosion.		
Trees and vegetation	Deforestation and desertification	Enhance environment by tree plantation in proper place of school premises and link road sides.		
		Re-vegetation of barren surfaces be encouraged		

Additional burden on utilities	Stress on water supply, energy, sewerage and communication	Ensure adequate provisions for facilities with concerned organizations
		O&M for sustenance of the shelters and approach roads.
Water supply and sanitation	Incidence of diseases	Ensure adequate supply of drinking water.
		Sanitation facilities for male and female workers separately
Health and safety	Health hazards and general safety of workers and people	Ensure adequate safety gears for workers.(PPE, accommodation, First Aid box)
		Arrange training for contractors and workers
		Provide temporary security fencing surrounding the construction site.
		Provide safe drinking water for workers
		Safety signboard at all sites in bangla & English languages.

## **Annex-9 : Format of Quarterly Monitoring Report**

### **1. Introduction**

### **2. Background of the Project**

- Basic project information including a synopsis of the project organization,
- Description of the physical component of project and the updated progress.
- A synopsis of work undertaken during the quarter;
- Project Environmental key personnel, contact names and telephone numbers;

### **3. Environmental Requirement**

- Summarize the environmental protection and pollution control/mitigation measures, as recommended in the agreed EMF report and subproject specific EMP.

### **4. Environmental Status**

- summarize the major activities undertaken by the different subprojects during the quarter with showing the inter-relationship with environmental protection/mitigation measures;
- describe the monitoring methodology;
- a quarterly assessment of construction impacts on water, air and noise quality as well as the construction waste management, labor camp management and safety assurance at the subproject site;
- Suggestion of appropriate mitigation measures if the quarterly assessment results demonstrate that the environment is declining ;
- a summary description of the actions taken in the event of non-compliance of the sub-projects sites those were visited last quarter;
- a summary description of the actions to be taken in the event of non-compliance those were visited this quarter and any follow-up procedures related to earlier non-compliance;
- a summary record of all complaints received (written or verbal) and subsequent redress for each subproject during this quarter.

### **5. Screening/EA Document Preparation :**

- submission the list of subprojects for those site specific environment screening/assessment have been carried out during this period.,
- summarize the key environmental issues of theses subprojects.

### **6. Others**

- weather conditions during the period at coastal areas;
- weather conditions that may affect the results;
- any other factors which might affect the monitoring results;
- graphical plots of the monitored parameters during the period;
- regulatory compliance progress (environment clearance certificate/renewal certificate from department of environment) etc.

### **7. Meeting and Discussion;**

Summarize the meeting and the subsequent decision on the environment management those have been taken this quarter.

### **8. Conclusions And Recommendations**

### **9. Annexure**

- Photograph of the different subprojects
- Environmental Monitoring Report
- Lab Test Report

*(Notes: Format is shown for Quarterly Monitoring Report (QMR) on environment compliance. Same format can be followed for QMR on social compliance.)*

## **Annex-10: Grievance Response Mechanism**

### **1. Objectives**

Objectives of grievance response are to create an enabling environment for any aggrieved persons and entities including project affected persons to lodge complaints, claims, grievances, etc. and their grievances are redressed through negotiation. Site selection, design options, procurement and construction activities may raise grievances among the communities in the catchment area of shelters. The land acquisition law allows land owners to raise their objections and complaints at the beginning of the legal process of land acquisition and later at the time of notification for collection of compensation. LGED district and upazila level offices have a provision of complaint box open to all stakeholders intending to produce a suggestion or lodge a complaint. Bank investment requires that community enjoy access to project grievance mechanism ensuring transparency and social accountability. It is evident that complaints and grievances may range from dispute over ownership and inheritance of the acquired lands, the affected persons and lost assets missed by PAP census, valuation of the affected assets, compensation payment, environmental pollution, procurement, and construction quality.

Considering the need, LGED will set up a formal grievance redress mechanism. Grievance redress system will be in place to lodge a complaint, a claim, a grievance, etc., without cost and with the assurance of a timely and satisfactory resolution of that complaint/claim/grievance. The aggrieved persons may raise queries and complaints during obtaining lands, preparation and implementation of SMPs and RAPs as well as during procurement and civil works construction. The procedure is to answer queries and address complaints and grievances about any irregularities in application of the guidelines adopted in this SMF.

### **2. Grievance Redress Committee (GRC) and Focal Point**

Grievance Redress Committee (GRC) will be formed and established at each project district. Grievance response focal point will be available at each shelter site for instant response to an aggrieved person, receiving written complaints or suggestions, produce them to the GRC for hearing and resolution. GRC will be formed with 7 members headed by the Executive Engineer, LGED at the district level as follows:

- |   |                             |
|---|-----------------------------|
| 1. LGED Executive Engineer (District)         | : Chairperson               |
| 2. Upazila Engineer (Upazila LGED Office)     | : Member Secretary          |
| 3. Social Development Specialist, Consultant  | : Technical Facilitator     |
| 4. Union Parishad Chairman                    | : Member                    |
| 5. Female Union Parishad Member               | : Member                    |
| 6. Representative of women group              | : Member                    |
| 7. Representative of the sponsoring institute | : Member (site focal point) |

### **3. Grievance Resolution Process**

All complaints and suggestions will be received formally in the LGED Upazila office by the GRC Member Secretary. The complaints will largely be channeled through the GRC focal points but aggrieved persons can also lodge the complaints and produce suggestions directly to the Upazila Engineer. Complaints may also be received directly at the Secretariat of GRC at the XEN office at the district level. An intake register will be maintained at the Upazila LGED Office (office of the member secretary). The UE will be assisted by his Community Organizer in recording the details of the grievances in the intake register for documentation and ensure impartiality, fairness and transparency. The intake registration will have



data/information columns including (i) Case no., (ii) date of receipt, (iii) name/type of complaint/grievance, (iv) sex, (v) father's name/husband's name, (vi) complete address of the person raises the complaint/grievance, (vii) main objection (loss of land/property or entitlement), (viii) detailed complaint story, (ix) expectation with documentary evidence and previous records of similar grievances will be documented in the intake register.

No GRC members can be contacted by the aggrieved persons in advance. Rather, the concerned persons are informed to attend formal hearings at an appointed date. The GRC committee will site for hearing at the District LGED office and pays patient hearing to the aggrieved persons. The GRC will record salient points to be presented by the aggrieved person and will examine their documentary evidences to be submitted during informal hearings.

A resolution register will be maintained at the GRC secretariat. Resolution register will contain (i) serial no., (ii) case no., (iii) name of complaint, (iv) complaint story and expectation, (v) date of hearing, (vi) date of field investigation (if any), (vii) results of hearing and field investigation, (viii) decision of GRC, (ix) progress (pending, solved) and (x) agreement or commitments. Besides, closing register will also be used. Closing register keeps records, such as, (i) serial no., (ii) case no., (iii) name of complaint, (iv) decision and response to complaints, (v) mode and medium of communication, (vi) date of closing, (vi) confirmation of complaints' satisfaction and (vii) management actions to avoid recurrence.

Based on consensus, the procedure will help to resolve issues/conflicts amicably and quickly, saving the aggrieved persons from having to resort to expensive, time consuming legal action. The procedure will however not pre-empt a person's right to go to the courts of law. The convener of the concerned GRC will have the authority to do the following things:

- Reject a grievance redress application with any recommendations written on it by a GRC member or any other person giving sufficient documentary evidence in favour of rejection of the grievance redress application,
- Remove a recommendation by any person that may separately accompany the grievance application,
- Disqualify a GRC member who has made any recommendation on the application or separately before the formal hearing,
- Appoint another person as GRC member for replacing the disqualified GRC member. The new GRC member will be appointed in consultation with the Superintending Engineer and keep the Project Coordinator informed of the replacement, and
- The Convener will also ensure strict adherence to the compensation rates determined through market price surveys following approved procedure.

## **Annex-11: Proposed Methods of Market Price Survey**

LGED will be assisted by the Design and Construction Supervision Consultant in carrying out market price surveys in line with the proposed compensation principles to determine replacement cost of acquired lands, houses/structures and other replaceable assets and market prices of irreplaceable assets by using the methods suggested below.

### ***Lands of All Kinds***

Deputy Commissioner (DC) Office determines compensation under Law (CUL) following legal procedure of land acquisition. Project Authority determines replacement value with assistance of Joint Verification Team (JVT) as per proposed entitlement package and entitlement matrix and modalities of compensation payment. Joint verification of acquired properties will be done in presence of the affected owners. Joint Verification Team may be formed with the following members.

- Sub-Divisional Engineer (LGED),
- Social Development Specialist, Consultant,
- Representative of the project affected persons,
- Representative of Local Government,
- The concerned Officer of local Land Office and
- Revenue Surveyor

An alternative method of market price is also presented for consideration here. The market price survey will explicitly take into consideration the quality of the lands under acquisition. Qualities of lands will be determined taking into account of current uses, cropping intensity and value of crops produced, accessibility from the existing roads, and any other characteristics that influence the market value of the lands. The surveys will be conducted with the following three groups of respondents:

- A random sample of 10-15 landowners in the *mouza* in which the lands under acquisition (for the new shelters or the repair and the extension works of the existing shelters or shelter connecting roads) are located,
- As many of the most recent buyers and the sellers of similar quality of lands as can be found in the *mouza* where the sub-project is located,
- The deed writers, who recently were involved in land purchase registration in the same *mouza*, willing to be interviewed, will be asked about the actual prices instead of the registered value of land recorded on the deeds.

### **Market value of the lands will be determined in the following manner:**

- If variations in average prices reported by the above-mentioned three respondent groups are insignificant (10% or less), current value of the lands will be fixed at the average of the prices reported by the three groups.
- In cases of significant differences in land prices (more than 10%), the current prices will be negotiated in open meetings with the affected and the other landowners, community leaders, CBOs/NGOs and the like.

Replacement costs of the lands will be equal to the market prices plus the registration costs or stamp duty. The registration cost will be calculated on the current market price of the lands.

## **Houses and Other Built Structures**

Replacement costs of houses and other built structures will be determined by JVT. The JVT verifies floor areas and housing materials based on census data. The PAP census will be completed within the cut-off date for all structures not covered under CUL. All compensation will be based on replacement values to be determined through market surveys.

Replacement costs of houses and other built structures will be based on the current prices of various building materials, labor and costs for other items in the local markets. The costs of building materials, such as bricks, cement, steel, sand, bamboo, timber, GI sheet, roofing materials like straw, *golpata*, etc, and labor will be based on:

- Survey of current prices of different types of materials with five or so dealers/manufacturers in the local markets.
- The replacement cost of the house/structure will be based on the lowest quoted price for each type of material, plus their carrying costs to the sites.
- The current costs of labor with different skills will be determined by interviewing local contractors, LGED staff, or local construction workers.

Replacement costs of any other replaceable affected assets will also be based on the current prices of materials, transportation and labor costs, etc as per Social Management Framework (SMF) of Multipurpose Disaster Shelter Project (MDSP), 2014.

## **Trees & Other Irreplaceable Assets**

- Market prices of different species of trees will be determined by surveying the prevailing prices paid by the timber and the fuel-wood traders in the local markets. The compensation for trees will be fixed at the highest prices offered by a trader.
- Compensation for all other irreplaceable assets will also be based on survey of their prevailing prices with dealers/traders in the local markets.

## **Fruits and Other Crops**

- Compensation will be determined at prices of the fruits and other crops during the harvest. Prices of different varieties of fruits and crops at harvest will be collected from a sample of 7-10 dealers in the local markets. The compensation for each type of fruit and crop will be fixed at the highest price offered by a trader.
- The market price surveys will begin as soon as locations of the required acquisitions are identified on the ground. LGED will document the replacement costs and market prices of various affected assets and make them available as and when asked for review by IDA.

## Annex-12: Compensation and Entitlement Matrix

### Category 1: Loss of Land

Entitlement	Entitled Person
<ol style="list-style-type: none"> <li>1. CUL includes 50% premium. CUL or replacement value whichever is greater.</li> <li>2. Compensation for acquired/requisitioned land will be determined by the Joint Verification Team (JVT).</li> <li>3. Stamp duties to purchase lands equal to the amount of land acquired.</li> </ol>	<ol style="list-style-type: none"> <li>1. Legal owner(s), including mortgagors, as determined by DC during CUL payment, or by court in cases of legal duties.</li> <li>2. Co-sharers/mortgagors to be determined by the title deeds and mortgage documents</li> </ol>
Application Guidelines	Implementation Issues
<ol style="list-style-type: none"> <li>1. Current market prices of land determined by the Joint Verification Team (JVT) to be the basis for determining replacement value and top-up payment.</li> <li>2. Purchase of replacement land is not required for stamp duty payment.</li> <li>3. Persons using Vested and Non-resident (VNR) properties under lease will be treated as per lease agreement, and will not qualify for project grant.</li> <li>4. Advance notice to be issued in time to harvest standing crops. If not possible, the value of crop at full harvest value is to be paid.</li> <li>5. Stamp duties will be included in the top up amount to be paid by the Project Authority.</li> </ol>	<ol style="list-style-type: none"> <li>1. PAPs to be informed of the details of compensation policies after issuance of Notice-3,</li> <li>2. Landowners to be assisted to procure any missing legal documents required to claim compensation from DCs,</li> <li>3. Mouza-wise current market prices of lands to be determined, considering their quality in terms of number and types of crops produced a year, flooding, irrigation facilities, accessibility and other factors influencing market prices,</li> <li>4. The project will not be used to collect outstanding dues or taxes on the acquired or other lands.</li> </ol>
<b>Responsibility</b> <ol style="list-style-type: none"> <li>1. Project authority for overall execution and coordination, ensuring GOB's support and timely financial disbursements.</li> <li>2. DC to pay CUL to all legal owners, and those with the legal evidence of interest in the lands.</li> <li>3. Project authority/TA consultants to inform PAPs of RAP policies, assist in updating records, pay difference between CUL and replacement value, and the stamp duties on the acquired lands, and monitor and report progress on RAP implementation.</li> </ol>	

### Category 2: Loss of Ponds and Fish Stock

Entitlement	Entitled Person
<ol style="list-style-type: none"> <li>1. CUL from DC which includes 50% premium or replacement cost of pond, including cost of land and excavation, whichever is greater.</li> <li>2. PAPs are allowed to harvest and keep the fish stock.</li> <li>3. If the pond is under lease from any GOB agencies, compensation from DC as per lease conditions.</li> </ol>	Legal owner of the pond to get compensation for land area, while usufruct right holder, legal or socially recognized, to get compensation for fish stock.
Application Guidelines	Implementation Issues
<ol style="list-style-type: none"> <li>1. Guidelines 1, 2 and 3 as indicated for Loss Category 1.</li> <li>2. If the fishpond is on public land and not under lease from GoB, the PAP is entitled to compensation for 25% of the existing fish stock, but is allowed to retain the entire fish stock.</li> </ol>	Magnitude of fish stock and value to be determined by JVT according to Fishery Dept standards and market prices.
<b>Responsibility</b> A in responsibilities 1, 2 and 3 indicated for Loss of Agriculture & Commercial Lands	

### Category 3: Loss of Houses/Structures Used for Living and Commercial Activities

Entitlement	Entitled Person
<ol style="list-style-type: none"> <li>1. Legal Owners are entitled persons. CUL includes 50% premium. CUL or replacement value, whichever is greater.</li> <li>2. Legal Owners will be paid House Construction Grant (HCG),</li> <li>3. Squatters will be paid House Transfer Grant (HTG) and HCG for certain types of low-cost houses/structures belonging to vulnerable PAPs.</li> <li>4. All house/structure owners are permitted to retain the salvageable housing and building materials.</li> <li>5. Tenants will be advance notice and assisted with finding alternative accommodation and be given shifting costs.</li> </ol>	<ol style="list-style-type: none"> <li>1. Legal owners as determined by DC during the CUL payment process and/or determined by court in cases of legal disputes,</li> <li>2. Socially-recognized and vulnerable owners of certain types of low-cost houses/structures built on public lands as found during the RAP Census.</li> <li>3. Tenants (those renting premises for residential and/or commercial purposes.</li> </ol>
Application Guidelines	Implementation Issues
<ol style="list-style-type: none"> <li>1. Legal Owners: Applies to all houses/structures standing on the acquired private lands at the time of issuance of Notice-3.</li> <li>2. Vulnerable Squatters: Applies to (a) shiftable structures built with materials salvageable without much damages (e.g., houses with bamboo thatch or other non-breakable walls and GI sheet or straw/leaf roofs and the like); and (b) non-shiftable houses with mud-plastered walls of jute stalk and similar cheap materials. Such houses/structures will be ineligible for compensation if (i) they are not used by the owners themselves, or (ii) rented out to others.</li> <li>3. Vulnerable Squatters: For (a) shiftable structures, HTG and HCG @ Tk 20 per sft with minimum Tk 1500 and maximum Tk 2000; and (b) non-shiftable structures, HCG @ Tk 30 per sft with minimum Tk 2500 and maximum Tk 3500.<sup>9</sup></li> <li>4. Non-shiftable houses/structures built with expensive materials (eg, brick walls with RCC roof, brick walls with GI sheet roof, cemented floor, etc) on public lands are not eligible for compensation or assistance.<sup>10</sup></li> <li>5. Small structures on poles which can be shifted without dismantling are not eligible for compensation (roadside small pan-bidi shops, groceries, tea stalls, etc.) but will be assisted in finding alternative location and given cost of shifting.</li> <li>6. No affected structures built after the cut-off date will be eligible for compensation.</li> <li>7. The Project Authority, in collaboration with local authorities will make best efforts to identify alternative housing sites for vulnerable squatters.</li> <li>8. All compensation will be based on replacement values to be determined through market surveys.</li> </ol>	<ol style="list-style-type: none"> <li>1. JVT to verify floor areas and materials based on Census data.</li> <li>2. The PAP Census will establish the cut-off date for all structures not covered under CUL.</li> </ol>
<p style="text-align: center;"><b><u>Responsibility</u></b></p> <p>As in Nos1, 2 and 3 indicated for Loss of Agricultural &amp; Commercial Lands</p>	

<sup>9</sup>These values are based on findings from previous projects. For the purpose of this RPF, values will be based on current market assessments and verified by JVT.

<sup>10</sup> The assumption is that these are encroachers (land grabbers, often with backing of influential people) setting up structures illegally on public lands, as opposed to vulnerable squatters who have no choice but to set up living quarters there.

#### Category 4: LOSS OF TREES, BAMBOO AND BANANA GROVES

<b><u>Entitlement</u></b>	<b><u>Entitled Person</u></b>
<ol style="list-style-type: none"> <li>1. Timber trees and bamboos: Current market value.</li> <li>2. Fruit-bearing trees (without Timber): If the tree is at or near fruit-bearing stage, estimated current value of the fruit determined by JVT.</li> <li>3. Fruit-bearing trees (with Timber): If the tree is at or near fruit-bearing stage, estimated market price of timber and fruits.</li> <li>4. Banana Groves: Estimated current value of one time crop of each grown-up tree.</li> <li>5. Trees grown under public/NGO sponsored program: Same as 1, 2, 3, and/or 4 above.</li> <li>6. Owners will be permitted to fell and retain the trees and fruits, after payment of compensation.</li> </ol>	<ol style="list-style-type: none"> <li>1. Legal owners as determined by DC during CUL assessment process.</li> <li>2. Socially recognized owners, such as squatters</li> <li>3. People with valid lease from GOB agencies.</li> <li>4. Groups sponsored by public agencies/ NGOs.</li> </ol>
<b><u>Application Guidelines</u></b>	<b><u>Implementation Issues</u></b>
<ol style="list-style-type: none"> <li>1. Estimated market value of different species of trees, based on categorization: big, medium and small.</li> <li>2. Value of perennial fruits to be determined as three years' value of the crop at the harvest prices.</li> <li>3. Where ownership is in group, compensation will not be paid to the any individual or the sponsoring agency.</li> </ol>	Where ownership belongs to groups, the project authority will ensure that the compensation is distributed among the members as per agreements.
<b><u>Responsibility</u></b> As in Nos. 1, 2 and 3 indicated for Loss of Agricultural Lands.	

#### Category 5: LOSS OF STANDING CROPS

<b><u>Entitlement</u></b>	<b><u>Entitled Person</u></b>
<ol style="list-style-type: none"> <li>1. Compensation for standing crops affected at the time of land handover.</li> <li>2. Cultivator will retain the crops and plants.</li> </ol>	Cultivator (person who planted the crop) whether owner, lease holder, tenant, sharecropper, etc. (formal or informal arrangements) as determined by JVT.
<b><u>Application Guidelines</u></b>	<b><u>Implementation Issues</u></b>
<ol style="list-style-type: none"> <li>1. Estimated market value at harvest, to be determined by JVT.</li> <li>2. Advance notice to be issued in time to harvest the standing crop. If not possible the value of the crop at full harvest price is to be paid.</li> <li>3. Share-croppers may avail of livelihood restoration Program</li> </ol>	<ol style="list-style-type: none"> <li>1. Market value at harvest will be established by JVT through on-site verification before handover.</li> <li>2. Verify whether or not crop is in existence on the acquired lands at the time of handover.</li> </ol>
<b><u>Responsibility</u></b> As in Nos. 1, 2 and 3 indicated for Loss of Agricultural & Commercial Lands.	

### Category 6: LOSS OF BUSINESS INCOME FROM DISPLACED COMMERCIAL PREMISES

<b><u>Entitlement</u></b>	<b><u>Entitled Person</u></b>
1. Compensation for loss of business/trading income.  2. Compensation for loss of rental income from rented-out premises situated on private lands.	1. Business operators in the affected premises (title-holders and vulnerable squatters without titles to their informal businesses; whether owning or renting premises), at the time of issuance of Notice-3, or during PAP Census. 2. Owner of the rented-out premises situated on private lands.
<b><u>Application Guidelines</u></b>	<b><u>Implementation Issues</u></b>
1. Compensation for loss of business income based on average daily net income for three months as determined by JVT. 2. Three months' rent to owner of the premise on private land, as determined by JVT. 3. Owners of business premises on public lands operating medium-large businesses (Encroachers) are not eligible for rental income <sup>11</sup> . 4. Vulnerable squatters who were conducting informal businesses may avail of livelihood restoration program  Also see Compensation & Entitlement Modalities	1. Eligible premises are permanently fixed to the ground with walls and roofs (not shiftable in intact condition).  2. Business type, floor area and capital investment to be recorded during PAP Census. 3. Eligibility of business owners, and premise owners and tenants to be verified by JVT.
<b><u>Responsibility</u></b>	
As in Nos.1, 2 and 3 indicated for Loss of Agricultural lands.	

### Category 7: TEMPORARY LOSS OF INCOME (WAGE EARNERS IN COMMERCE & INDUSTRY)

<b><u>Entitlement</u></b>	<b><u>Entitled Person</u></b>
Grant to cover temporary loss of regular wage income for three months or for the period of the transition, should they continue to be employed in the same business/organization	Adult persons employed continuously for at least six months in businesses displaced from private and public lands.
<b><u>Application Guidelines</u></b>	<b><u>Implementation Issues</u></b>
1. Length of employment to be counted backward from the cut-off date.  2. Grant = daily wage rate x 3 months, to be determined by JVT.  3. Minor children of the business owners, who assist on a part time basis, are not eligible for this grant.	1. The JVT to verify the information in relation to the number of employees in the displaced business.
<b><u>Responsibility</u></b>	
The project authority (1 and 3 as for Loss Categories 1 and 2).	

<sup>11</sup> These would not be vulnerable squatters, but encroachers/land-grabbers

### Category 8: LOSS OF USUFRUCTRIGHTS IN MORTGAGED-NV, LEASED-IN AND KHAI-KHALASHI LANDS

<u>Entitlement</u>	<u>Entitled Person</u>
Compensation as per Loss Categories 1 & 2 above, to be shared as per usufruct/mortgage contracts.	1. Persons with legal agreements. 2. Persons with verbal agreements.
<u>Application Guidelines</u>	<u>Implementation Issues</u>
1. Legal owner and mortgagee/leaseholder will be paid CUL by DC as per the law. 2. Legal owner will pay the outstanding liabilities to the interested persons upon receipt of CUL from the DCs as per verbal agreement. 3. In cases where CUL is smaller than replacement value, legal owner will get the top- up from project authority (i) if all liabilities are already paid up; (ii) if not, the legal owner will get the residual after all liabilities are paid up. If the liability exceeds the amount to be paid by the project authority, the landowner will pay it.	1. Where the contract is verbal, As in Nos. 1, 2 JVT will verify the persons with interests in the acquired assets due to mortgage, lease or khai- khalashi right. 2. Any disputes over verbal agreements to be resolved through grievance redress procedure.
<u>Responsibility</u>	
As in No. 1,2 and 3 indicated for Loss of Agricultural Lands.	

### Category 9: USES OF VESTED & NON-RESIDENT PROPERTIES (VNR)

<u>Entitlement</u>	<u>Entitled Person</u>
1. Three times the estimated value of all crops produced in the acquired vested agricultural land in the year or preceding year of acquisition. 2. If only a portion of the vested homestead land is acquired, the user is allowed to live on the residual land and assisted to relocate his/her houses with HTG and HCG as stipulated for Loss of Houses/structures.	Present users of the VNR properties found during the PAP Census.
<u>Application Guidelines</u>	<u>Implementation Issues</u>
1. Apply only to those cases that are identified by DCs during the acquisition for this project. 2. Will not apply to those VNR cases which were identified through 1984. Leaseholders of such lands will be treated by DCs as per agreement, and the project authority will have no obligation to deal with them.	JVT will verify whether the property was designated VNR earlier (1984 or before), or designated during acquisition for MDSP.
<u>Responsibility</u>	
The project authority (1 and 3 as indicated for Agricultural and Commercial Lands).	

### Category 10: OTHER/UNKNOWN LOSSES

<u>Entitlement</u>	<u>Entitled Person</u>
Other impacts that may have remained unknown shall be mitigated based on the same principles applied for other impacts described in the Policy Matrix. The nature of entitlements and support mechanism shall be approved by GOB and IDA.	Legal owners, squatters and others with an interest on the lands.
<u>Application Guidelines</u>	<u>Implementation Issues</u>
To be based on PAP Census and nature of the impacts	To be agreed upon by GOB and IDA.
<u>Responsibility</u>	
As in Nos. 1, 2 and 3 indicated for Loss of Agricultural & Commercial Lands.	



### **Annex-13: Terms of Reference for Senior Social Development Specialist, PMU**

- i. Review current policies, legislations, and procedures/practices of the Government of Bangladesh (GoB) for land acquisition and population displacement related infrastructure development and explain its implications to the proposed project.
- ii. Review the relevant World Bank social development and safeguard policies including Operational Policies (OP) on involuntary resettlement (OP 4.12) and on indigenous peoples (OP 4.10) and explain their implications to the proposed project.
- iii. Collect and review the SRPF of the ongoing ECRRP for relevant sections on construction and improvement of multipurpose disaster shelters and similar projects in LGED. Based on review, develop an assessment study on the expected positive and negative impacts of the overall social management and safeguard compliance.
- iv. Review the SMF and develop the consultation approach and program from social perspective; and provide the guidelines for identification of key stakeholders and consultation with them for inclusion, participation, transparency and social accountability.
- v. Design and carry out community consultation and focused group discussion with community groups focusing on women, very poor, and tribal peoples for their concern, options and suggestions on location and design of shelters and the associated social development and safeguard issues. Special consultation will be carried out tribal communities.
- vi. Describe the key information required to demonstrate overall socioeconomic profile of the project area populations obtained from secondary sources and from the consultation exercise.
- vii. Design and conduct social screening and social impact assessment of sub-projects (construction and improvement of shelters and roads connecting to the shelters), and preparation of Social Management Plans (SMP) for each construction package and where required Resettlement Action Plan (RAP) integrated with an inclusion and participation plan.
- viii. Describe the definition of impacts, project affected people, eligibility criteria and entitlement matrix; implementation arrangements, monitoring and evaluation process, grievance redress procedure and disclosure processes among other relevant topics.
- ix. Develop a disclosure and social accountability mechanism including grievance redress process and capturing suggestions from the beneficiaries for social adaptability of project design and implementation activities.

## Annex-14: Social Assessment of Subproject Sites

**Form T-1**

### DATA SHEET FOR INFORMATION ON SHELTER SITE & ROAD

1. Name of Shelter/Road ..... Code No. ....
2. AddressVillage: ..... Union: .....
- Upazila: .....District: .....
3. Catchment area of the shelter (mention below): Total no. of villages:

Name of village	Number of households	Number of tribal households (if any)	Population	Direction from cyclone shelter	Distance from cyclone shelter (meter)
<b>Total</b>					

Direction: 1) North; 2) North-East, 3) East 4) South-East, 5) South 6) South-West, 7) West, 8) North-West

4. Accommodation capacity of cyclone shelter: ..... Persons|
5. Proportion of total population at risks can be accommodated in the shelter? .....%
6. Location of cyclone shelter: (1) Located at center of village/villages - [1] With pucca road/  
[2] With kutcha road  
[3] There is no road  
(2) Located at periphery- [1] With pucca road/  
[2] With kutcha road  
[3] There is no road  
[3] Accessibility of 25% of catchment area population in the cyclone shelter [ ] Yes/ [ ] No

**FORM T-2**

### DATA SHEET FOR SOCIAL PROFILE OF BENEFICIARYVILLAGE(S)

1. Name of Cyclone Shelter/Road: ..... Code No.....
2. Name of village/villages in the catchment area:  
.....
3. Population: Total no. of family: ..... Total population .....

4. Male population: ..... Female population: .....

5. Religious proportion of population:

Religion/caste/sub-caste	Proportion of population (%)	No. of family	Population

6. No. of family at risks at the event of cyclone/natural disaster: ..... families (not having *pucca/semi-pucca* houses).

Region/caste/sub-caste	No. of families at risks

7. Is there any caste/sub-caste/community (e.g., cobbler, sweeper/*dom*, *chandal*, grandener) which keep the, isolated from mainstream society? [1] Yes / [2] No.

7.a. If yes, how many families? ..... families

7.b. Their religion .....

7.c. Their religion/caste/sub-caste.....

7.d. Describe how they are isolated from mainstream society?

.....

.....

8. What are their suggestions for getting services from cyclone shelters?

.....

.....

9. What losses/damages were caused in the village(s) during cyclone Sidr 2007?

.....

10. Degree of losses/damages of assets/properties of families in the affected area (mention in percentage)

Name of lost/damaged assets/properties	Fully affected	Moderately affected	Minimally affected	Loss/damage (%)

Crops				
Fishery				
Permanent assets/properties				
Livestock				
Human casualties	-	-	-	Total no. deceased persons-

Note: put tick mark (v) in applicable cases in the table above

11. What would be the advantages/benefits if there were a cyclone shelter in this area?

.....  
.....  
.....

12. What problems and difficulties people in this area faced/encountered at the event of cyclone due to lack of cyclone shelter?

.....  
.....  
.....

13. At what places how many families could manage to take shelter at the event of cyclone? ... ..  
.....families

14. Information related to education, occupation and income of the villagers

#### 14.a. Education

Indicator	Male (%)	Female (%)	Total (%)
Literacy rate (6 year and above aged persons)			
Rate of school going children			

#### 14.b. Income earning occupations

Name of occupation	Percentage of families depend on respective occupations
Agriculture	
Agri-labor	
fishing and fish cultivation	
business	
service	
Traditional work	
Skill based work	
Total	

#### 15.a. Average family income

Economic group	No. of families	Average annual income per family
Very rich		

Moderate rich (medium)		
Poor		
Very poor (destitute)		
Total		

#### 15.b. Type of housing structure

Pucca building	Families having such house	Any such house is safe during cyclone (Yes/No)
Semi-pucca building		
Tin house with wooden pole		
Tin house with bamboo pole		
Thatched house		
shanties		
Total		

#### 15.c. Women's status

Women rights are respected in the community? [1] Yes / [2] No .....%

Lands are titled to women? [1] Yes / [2] No .....%

No. of female headed families depend on charity? No. of families.....

No. of families with women as main income earners? No. of families .....

No. of divorced women in the village(s)? No. of divorced women.....

No. of widow women in the village(s)? No. of widow women.....

#### 15.d. Status of vulnerable male persons

No. of male headed families depend on charity? No. of families.....

No. of divorced men in the village(s)? No. of divorced men.....

No. of widower in the village(s)? No. of widower.....

### 16. Village administration and leadership

#### 16.a. Influential families and lineages in the villages under the catchment area of cyclone shelter

Family/lineage	Head of lineage	Social position (e.g., UP Chairman; Ward Member; Teacher; Lawyer; Politician; Social Activist/Worker)

16.b. Which family/lineage play important role in contributing to village development (e.g., road construction; electrification in the village; construction/renovation of mosque; irrigation, etc)?

16.c. Which family/lineage play important role in village administration/governance (e.g., mediate in arbitration; collect contributions for mosque/*maktab*; witnessing at wedding/divorce; maintain communication with UP Chairman and Ward Member)?

17. Name and signature of data collector: ..... Date: .....

## COMMUNICATION AND PARTICIPATION PROGRAMME

- ### Attendance of the participants (Identity and signatures)

[illegible]

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- b. As narrated and discussed by the participants of the consultation meeting about problems, sufferings, concerns and risks related to cyclone and natural disasters of the potential affected people in the villages under the catchment area

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- c. Suggestions provided by the participants of the consultation meeting for sound implementation of the project

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- d. Name of and signature of facilitator of the consultation meeting

**Annex-15: Format for voluntary donation of land**

**Form T-4**

**Voluntary Donation of Land for Shelter Site**

[On a BDT 300- Stamp Paper]

1. This deed of voluntary donation is made and executed on .....  
 day of ..... between  
 .Md./Mr.....S/o.....

W/o..... Age..... Occupation.....  
 resident of .....herein  
 after called titled holder and legally own the land on one part. This expression shall mean  
 and include his legal representatives, successors — in-interest, heirs, assignees, nominees etc.

AND

Md./Mr/Ms. .... S/o .....

w/o .....Aged .....  
 Designation..... herein after called the " Recipient" which term denotes to "for and on  
 behalf of [*name of sponsoring institution*], authorized under the Ministry of Primary and Mass Education,  
 Government of the Peoples' Republic of Bangladesh on the other part and shall mean and include his/her successors  
 —in-office, nominees and assignees etc.

2. Whereas, the details of the Location of the, land are given below:

Location Details		
Mouza		
Upazila		
District		
Land owners Details:		
Name of land owner ((authorised one))		
Father/ Husband's Name of land owner		
Age	Yrs. Occupation:	Address:
Gender		
Schedule of Land		
Plot No.		
Khatian No.		
Area of land (Decimal)		Proportion of total land holding (%): _____ <small>[the donated land should not be more than 10% of total land holding]</small>
Location/Mouza		
Territory :		



North Boundary	
East Boundary	
West Boundary	
South Boundary	

Note: Detailed Map to the scale is appended.

3. Whereas the land owner(s) is presently using/ holding the transferable right of the above mentioned piece of land in the Mouza mentioned above.

4. Whereas the land owner testifies that the land is free of encumbrances and not subject to other claims/ claimants.

5. Whereas the land owner hereby voluntarily surrenders the land without any type of pressure, influence or coercion what so ever directly or indirectly and hereby surrender all his/her subsisting rights in the said land with free will and intention.

6. Whereas the Recipient shall construct and develop shelters/connecting roads under the Multipurpose Disaster Shelter Project and take all possible precautions to avoid damage to adjacent land/structure/other assets.

7. Whereas both the parties agree that the infrastructure so constructed/developed shall be for the interest of the public.

8. Whereas the provisions of this agreement will come into force from the date of signing of this agreement and a deed of title transfer will be registered afterwards as per law of the country.

Signature of Land owner		Signature of Tahasildar	
Name of land owner		Name of Tahasildar	
Date		Date	
Identified by			
Witnesses			
Signature of Chairman/Member			
Name of Chairman/Member			

Signature of authorized representative of the sponsoring institution with seal	
Name of the representative	
Witnesses	
Signature of LGED official with seal	
Name of LGED official	

**Annex-16: Format for voluntary donation of land possession for use as road**

**Form T-5**

**Voluntary Donation of Land Possession for Shelter Connecting Road**

**Community Agreement**

This community agreement of voluntary donation of land possession is made and executed on ..... day of ..... as negotiated with the representatives of owners and users of lands along the road for development under the following package as connecting road to the shelter mentioned hereunder.

Road Package No. \_\_\_\_\_

Name of the Connecting Road: \_\_\_\_\_

Name of the Shelter connected: \_\_\_\_\_

Venue of Negotiation Meeting: \_\_\_\_\_

Date of Negotiation: \_\_\_\_\_ Time: \_\_\_\_\_

**Participants and Attendance**

Representatives of land owners (name, age, sex, signature and contact details):

Encroachers:

Owners:

Representatives of the community(name, age, sex, signature and contact details):

### Proceedings of the Negotiation

Context (background of the road, original width, current width, encroachment, squatting, inadequacy of width and need for additional land, owners and users of required lands, need for vacation and dedication of the lands for the road for improvement):

---

---

---

Proposal (A community request for vacation and dedication of the lands for road use should be proposed here as agreed in the mass negotiation meeting):

---

---

Agreement (Pls mention proportion of the participants agreed on vacation and dedication of the land possession requested for use in the road voluntarily without compensation with relevant details):

---

---

Measures against any disagreement and vulnerability (if anybody among the owners disagrees or is vulnerable economically, measures taken as per OP 4.12 will be mentioned here):

---

---

Chair of the Negotiation Meeting

Elected Representative

President, Executive Committee  
Sponsoring Institution

Administrative Chief  
Sponsoring Institution

## Annex-17: Screening Form for Social Safeguards Issues

*[The filled out forms will be reviewed and evaluated by a professional expert assigned by LGED/ consultant. The project consultant will include a summary estimate of the impacts and mitigation requirements for each site in the Screening Report. Impacts identification and the mitigation eligibility and requirements should follow the principles adopted in this SMF. Preparation of a social management plan does not depend on this screening.]*

### REVIEW and EVALUATION

Name of Community: ..... Municipality: .....  
Name of Name of District: .....  
Maholla.....

#### I. Subproject Exclusion Criteria

*In respect of the social impacts and subproject exclusion criteria,*

Does the site qualify for subproject construction? ☐ Yes ☐ No

#### II. Resettlement Impacts

*In respect of the social impacts and community concerns, is there a need to,*

Undertake an in-depth social impact assessment study? ☐ Yes ☐ No

Prepare a Resettlement Action Plan? ☐ Yes ☐ No

#### III. Impacts on Tribal Peoples

*In respect of the social impacts on TPs and their concerns, is there a need to,*

Undertake an in-depth impact assessment? ☐ Yes ☐ No

Prepare a Tribal Peoples Plan? ☐ Yes ☐ No

***The attached filled out format has been reviewed and evaluated by:***

Signature:

Date:

Name:

Designation:

### SOCIAL SAFEGUARDS SCREENING OF SUBPROJECT

*[To be filled in for each subproject site jointly by LGED and Project consultant. Where private lands are to be acquired or public lands are to be resumed from authorized and unauthorized private users, census of affected persons and inventory of losses to be carried out.]*

### A. Identification

1. Name of Subproject: ..... Union: .....  
Upazila..... District:  
.....

2. Brief description of the physical works:

.....  
.....  
.....  
.....

3. Screening Date(s): .....

### B. Participation in Screening

4. Names of consultants' representatives who screened the subproject :

5. Names of LGED officials participated in screening:

6. Local Government representatives and community members & organizations participated in screening: List them in separate pages with names and addresses, in terms of community selection and any other information to identify them during preparation of impact mitigation plans.

7. Would-be affected/benefited persons participated in screening: List them in separate pages with names, addresses in terms of community selection where they would be affected, and any other information to identify them during preparation of impact mitigation plans.

### C. Land Requirements & Ownership

8. Will there be a need for additional lands\* to carry out the intended works under this contract?

[ ] Yes [ ] No (\* 'Additional lands' mean lands beyond the existing available land)

9. If 'Yes', the required lands presently belong to (Indicate all that apply):

[ ] Private citizens [ ] Government – khas & other GoB agencies

[ ] Others (Mention): .....

### D. Current Land Use & Potential Impacts

10. If the required lands belong to Private Citizens, they are currently used for (Indicate all that apply):

- [ ] Agriculture # of households using the lands: .....
- [ ] Residential purposes # of households living on them: .....
- [ ] Commercial purposes # of persons using them: ..... # of shops: .....
- [ ] Other Uses (Mention): ..... # of users: .....

11. If the required lands belong to Government agencies, they are currently used for (Indicate all that apply):

- [ ] Agriculture # of persons/households using the lands: .....
- [ ] Residential purposes # of households living on them: .....
- [ ] Commercial purposes # of persons using them: ..... # of shops: .....
- [ ] Other Uses ..... # of users: ..... (Mention):

12. How many of the present users have lease agreements with any government agencies?

.....

13. Number of private homesteads that would be affected on private lands:

Entirely, requiring relocation: ..... Partially, but can still live on present homestead: .....

14. Number of business premises/buildings that would be affected on private lands: .....

Entirely and will require relocation: ..... # of businesses housed in them: .....

Partially, but can still use the premises: ..... # of businesses housed in them: .....

15. Residential households will be affected on public lands: .....

Entirely affected and will require relocation: # of these structures: .....

# of structures built with brick, RCC, & other expensive and durable materials: .....

# of structures built with inexpensive salvageable materials (bamboo, GI sheets, etc.: ....

Partially affected, but can still live on the present homestead: # of structures: .....

# of structures built with brick, RCC, & other expensive and durable materials: .....

# of structures built with inexpensive salvageable materials (bamboo, GI sheets, etc.): ....

16. # of business premises that would be affected on public lands:

Entirely affected and will require relocation:

# of these structures: .....

# of businesses housed in these structures: .....

# of persons presently employed in the above businesses: .....

# of these structures built with brick, RCC, & other durable materials: .....

# of structure built with inexpensive salvageable materials (bamboo, GI sheets, etc.): .....

Partially affected, but can still stay in the present premises:

# of these structures: .....

# of businesses housed in these structures: .....

# of persons presently employed in these businesses: .....

# of these structures built with brick, RCC, & other durable materials: .....

# of structure built with inexpensive salvageable materials (bamboo, GI sheets, etc.): .....

17. Number of businesses/trading activities that would be displaced from make-shift structures on the project area: .....

18. Do the proposed project works affect any community groups' access to any resources that are used for livelihood purposes?

☐ Yes

☐ No

9. If 'Yes', description of the resources:

.....  
.....  
.....  
.....  
.....

20. Do the proposed works affect community facilities like school, cemetery, mosque, temple, or others that are of religious, cultural and historical significance?

☐ Yes

☐ No



21. If 'Yes', description of the facilities: .....

.....

.....

.....

.....

.....

22. Describe any other impacts that have not been covered in this questionnaire?

.....

.....

.....

.....

23. Describe alternatives, if any, to avoid or minimize use of additional lands:

.....

.....

.....

.....

.....

#### **E. ADDITIONAL INFORMATION ON TRIBAL PEOPLES**

(This section must be filled in if sites are located in areas that are also inhabited by tribal peoples or tribal peoples.)

24. Is the community located in an area inhabited by tribal peoples?

☐ Yes

☐ No

If the answer is no, skip this section of the form.

25. If the answer is Yes, is there any TPs Impacted by the land acquisition or any other interventions of the project?

☐ Yes

☐ No

26. If the answer is Yes to question no. 25, is there any TPs also likely to be benefited from the subproject?

☐ Yes ☐ No

27. If the answer is Yes to question no. 26, is there any TPs likely to be affected by the subproject?

☐ Yes ☐ No

If the answers to questions 26, 27 and/or 28 are no, skip the following sections of the form.

28. Have the TP community and the potential affected TPs been made aware of the potential positive and negative impacts and consulted for their feedback and inputs?

☐ Yes ☐ No

Has there been a broad-based community consensus on the proposed works?

☐ Yes ☐ No

29. Total number of would-be affected TP households: .....

30. The potential affected TP households have the following forms of rights to the required lands:

☐ Legal: # of households: .....

☐ Customary: # of households: .....

☐ Lease agreements with any GoB agencies: # of households: .....

☐ Others (Mention): ..... # of households: .....

31. Does the project affect any objects that are of religious and cultural significance to the TPs?

☐ Yes ☐ No

32. If 'Yes', description of the objects:

.....  
.....

33. The following are the three main economic activities of the potential affected TP households:

- a. ....
- b. ....
- c. ....

34. Social concerns expressed by TP communities/organizations about the works proposed under the subproject:

.....

.....  
.....

35. *The TP community and organizations perceive the social outcomes of the subproject:*

☐ Positive      ☐ Negative      ☐ Neither positive nor negative

36. *Names of TP community members and organizations who participated in screening:*

.....  
.....

***On behalf of the project consultant, this Screening Form has been filled in by:***

Name: .....	Designation: .....
Signature: .....	Date: .....