

Environmental Assessment and Review Framework

May 2014

Bangladesh: Flood and Riverbank Erosion Risk Management Investment Program

Prepared by the Bangladesh Water Development Board for the Asian Development Bank.

CURRENCY EQUIVALENTS

(as of 1 February 2014)

| | | |
|---------------|---|------------|
| Currency unit | – | taka (Tk) |
| Tk1.00 | = | \$0.012874 |
| \$1.00 | = | Tk77.675 |

ABBREVIATIONS

| | | |
|--------|---|--|
| ADB | – | Asian Development Bank |
| BWDB | – | Bangladesh Water Development Board |
| CC | – | Cement concrete |
| DOE | – | Department of Environment |
| DOF | – | Department of Fisheries |
| EARF | – | Environmental Assessment and Review Framework |
| EIA | – | Environmental Impact assessment |
| EMP | – | environmental management plan |
| FREMIP | – | Flood and Riverbank Erosion Risk Management Investment Program |
| GAF | – | Grievance Action Form |
| GOB | – | Government of Bangladesh |
| IEE | – | Initial Environmental Examination |
| ISPMC | – | institutional strengthening and project management consultants |
| JMREMP | – | Jamuna Meghna River Erosion Mitigation Project |
| MFF | – | Multi-tranche Financing Facility |
| NEMAP | – | National Environmental Management Plan |
| NWMP | – | National Water Management Plan |
| PMO | – | Project Management Office |
| SMO | – | sub-project management offices |
| TOR | – | Terms of Reference |

GLOSSARY

| | | |
|----------|---|---|
| Beel | – | tentative water bodies appeared during the monsoon season |
| Charland | – | tentatively emerged islands in rivers |
| Upazila | – | administrative unit under a district |
| Union | – | administrative unit under a upazila |

NOTES

- (i) The fiscal year (FY) of the Government of Bangladesh ends on 30 June. FY before a calendar year denotes the year in which the fiscal year ends, e.g., FY2013 ends on 30 June 2013.
- (ii) In this report, "\$" refers to US dollars.

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I. INTRODUCTION

1. The Flood and Riverbank Erosion Risk Management Investment Program (FREMIP) is financed by the Asian Development Bank (ADB), Government of Netherlands, and Government of Bangladesh (GOB). The Bangladesh Water Development Board (BWDB) is the Executing Agency. The investment program is to be financed through a Multi-tranche Financing Facility (MFF).

2. The investment program aims to sustain incomes and livelihoods of people living along selected reaches of Jamuna, Ganges, and Padma by enhancing resilience to flood and riverbank erosion. Project outputs will (i) establish at priority river reaches, sustainable, integrated non-structural and structural risk management measures, and (ii) strengthen the flood and riverbank erosion risk management system. The MFF would provide a maximum loaned amount of approximately US\$ 250 million in three tranches over a nine-year period.

3. The investment program comprises three outputs. Output 1: Flood and riverbank erosion risk mitigation measures at priority reaches will include investments in (i) riverbank protection; (ii) rehabilitation/construction of flood embankments, (iii) emergency/adaptive riverbank protection works; (iii) community based flood risk management; (iv) capacity building among communities for operation and maintenance; and (v) livelihood support for project affected peoples. Output 2: Strengthening institutional system for flood and riverbank erosion risk management established will include (i) institutional strengthening for river and sustainable asset management, and (ii) data and knowledge base development. Output 3 will support Program Management.

4. While priority reaches for next tranches have been identified, since details are not fully known at this stage, this Environmental Assessment and Review Framework (EARF) has been prepared to guide, screening, categorization, preparation of environmental assessments including environmental management plans, and implementation of safeguard plans in accordance with the laws of GOB, and ADB's Safeguard Policy Statement (2009). Outputs two and three will not give rise to any environmental concerns, and therefore any assessments will be required for Output 1 activities.

5. **Assessment of Legal Framework and Institutional Capacity:** The Bangladesh National Environmental Policy of 1992 sets out the basic framework for environmental action, together with a set of broad sectoral action guidelines. The Environment Policy provides the broader framework of sustainable development in the country. It also states that all major undertakings, which will have a bearing on the environment, (including setting up of an industrial establishment) must undertake an Initial Environmental Examination (IEE) or Environmental Impact Assessment (EIA) before they initiate the project. The Environment Policy delineates the Department of Environment (DOE) as the approving agency for all such IEE/EIA's to be undertaken.

6. Building on the National Environmental Policy, 1992 a number of Acts, Rules, and Plans expands on and provides a basic framework for environmental action and the set of broad sectoral action guidelines for sustainable development:

- (i) The National Environmental Management Plan (NEMAP, 1995) addresses issues and management requirements for the period 1995 to 2005 and set out the framework within which the recommendations of the National Conservation Strategy, 1992 are to be implemented.

- (ii) The Bangladesh Climate Change Strategy and Action Plan (BCCSAP, 2009) is built on six pillars of which five are relevant: (a) food security, (b) comprehensive disaster management, (c) sustainable infrastructure, (d) research and knowledge management, especially with respect to climate changes, (e) capacity building of government ministries and agencies.
- (iii) The Environmental Conservation Act (1995) and Amendments with its 2000 and 2002 amendments is currently the main legislation for environment protection in Bangladesh. The Act addresses environment conservation, environmental standards development and environment pollution control and abatement, and requires project proponents to obtain Environmental Clearance from the Director General, DOE prior to construction.
- (iv) The Environmental Court Act (2010) provides for the establishment of an environment courts and amends the prevailing act to accelerate punishment of environment-related crime.
- (v) The Environmental Conservation Rules defined categories of industries and projects and the types of environmental assessments each requires.
- (vi) The Environmental Clearance Procedure for Red Category Projects shows the application procedure for obtaining site / environmental clearance. To obtain an environmental clearance certificate for category Red projects (the category of the types of projects to be supported under the investment program), the following documents and materials must be submitted with the application to DOE: Project feasibility report, where applicable, Environmental impact assessment report, Environmental management plan, No Objection Certificate from relevant local authority (where applicable), other necessary information, where applicable.

7. As a consequence of the Flood Action Plan, which occurred in response to the extreme 1987 and 1988 floods, the water sector orientation shifted to participatory water management, specifically focusing on the large number of flood control, drainage, and irrigation (FCDI) schemes. The key documents are:

- (i) The National Water Policy of 1999 marks a fundamental shift from the technical/hydrological approach to water management of the 1980s and early 1990s towards integrating socio-economic factors and environmental aspects of water management. It was passed to ensure efficient and equitable management of water resources, proper harnessing and development of surface and ground water, availability of water to all concerned and institutional capacity building for water resource management. It has also addressed issues like river basin management, water rights and allocation, public and private investment, water supply and sanitation, and water needs for agriculture, industry, fisheries, wildlife, navigation, recreation, environment, preservation of wetlands, etc. The Policy states the need to counter land loss through erosion: "Undertake survey and investigation of the problem of riverbank erosion and develop and implement master plans for river training and erosion control works for preservation of scarce land and prevention of landlessness and pauperization. Plan and implement schemes for reclamation of land from the sea and rivers."
- (ii) The National Water Management Plan (NWMP, 2001) defines the Main Rivers as separate planning entity and allocates nearly 25% of the overall funds to the main rivers. The NWMP is strongly focused on implementation and provides a number of detailed investment programs. With respect to river training and "flood control", substantial new developments have taken place since preparation of the plan some 15 years ago.

- (iii) The Water Resources Planning Organization (WARPO) Guidelines for Environmental Assessment of Water Management Projects, 2003 covers the environmental assessment of water resources projects commonly covering one full hydrological cycle.
- (iv) The National Policy for Arsenic Mitigation (2004) provides a guideline for mitigating the effect of arsenic on people and environment in a realistic and sustainable way. It supplements the National Water Policy (1998) and the National Policy for Safe Water Supply and Sanitation (1998) in fulfilling national goals related to poverty alleviation, public health, and food security.
- (v) The Bangladesh Water Act, 2013 vests the ownership of water resources in the Government of Bangladesh and gives effect to the National Water Policy (NWP) for integrated management, development, utilization, and protection of water resources.

8. Five key policies, plans, and acts cover a broad range of issues related to wildlife, fisheries, forestry and biodiversity:

- (i) The Bangladesh Wild life Preservation (Amendment) Act 1974 provides for power of government to declare areas for preservation and defines the different types of areas and the degree of protection.
- (ii) The Protection and Conservation of Fish Act (1950) provides protection measures to fish through a number of prohibits and restrictions.
- (iii) The East-Bengal Protection and Fish Conservation Act (1950), as amended by the Protection and Conservation of Fish (Amendment) Ordinance (1982) and the Protection and Conservation of Fish (Amendment) Act (1995), provides for the protection and conservation of fish in inland waters of Bangladesh.
- (iv) The National Forestry Policy (1994) is a revision of the National Forest Policy (1977) in light of the National Forestry Master Plan. The major targets of the Policy are to conserve existing forest areas; bring approximately 20 per cent of the country's land area under the afforestation program; and increase reserve forest land by 10 per cent by the year 2015, through coordinated efforts of Government and non-governmental agencies, and active participation of the people.
- (v) The Biodiversity Conservation Strategy and Action Plan 2004 (BCSAP) is a wide ranging and multi-faceted plan, which is also closely related to the statements set out in the National Environment Policy.

9. The goal of the National Agriculture Policy (1999) and the New Agricultural Extension Policy 1996 is to facilitate and accelerate technological transformation with a view to achieving self-sufficiency in food production and improving the nutritional status of the population. The Land-Use Policy (2001) aims to ensure land use in harmony with the natural environment.

10. Of the international environmental agreements to which Bangladesh is a party, those potentially relevant to the Project are:

- (i) Convention on Wetlands of International Importance (also known as the Ramsar Convention, 1971; Bangladesh 1992) – promotes conservation and wise use of all wetlands
- (ii) Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES Convention, 1975, Bangladesh 1981)– aims to ensure that

international trade in specimens of wild animals and plants does not threaten their survival

- (iii) Convention on Biological Diversity (1993, Bangladesh 1994) – addresses three objectives (a) sustainable use of biological diversity components, (b) fair and equitable sharing of genetic resources utilization benefits
- (iv) Convention on the Conservation of Migratory Species of Wild Animals (also known as CMS or Bonn Convention) (1983; Bangladesh 2005) – addresses conservation of terrestrial, marine, and avian migratory species throughout their ranges, including conservation of migratory species habitats

11. **ADB's Environmental Safeguard Requirements:** ADB has classified projects under four categories depending on the most environmentally sensitive component, including direct, indirect, cumulative and induced impacts in the project's area of influence. The categories are (i) Category A – where projects are likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. The impacts may affect an area larger than the sites or facilities subject to physical works. Such projects require an EIA; (ii) Category B – where potential adverse impacts are less than those of Category A. Impacts are generally site specific, few if any are irreversible, and in most cases mitigation measures can be designed more readily than for Category A projects. Such projects require an IEE; (iii) Category C, which incurs minimal or no adverse environmental impact and thus does not require environmental assessment, although environmental implications need to be reviewed. Environmental Due Diligence will be adequate for such projects; and (iv) Category FI refers to projects that involve investment of ADB funds through a financial intermediary, and is not applicable to the present Project.

12. **Adequacy of Institutional Capacity:** The BWDB is an organization with a dominant technical focus. Non engineering work including environmental management, have received less priority. However, through its engagement in several externally funded projects, the BWDB has demonstrated the will and ability to comply with requirements related to implementation of environmental assessments and management plans. While the BWDB employs some environmental staff in the planning wing, it does not have a dedicated environmental monitoring cell. Environmental management of projects has been monitored through consultants and staff dedicated to project implementation.

13. Due to limited in-house capacity the nominated environmental compliance officer in the Project Management Office (PMO) will be supported by international and national environmental management specialists from the institutional strengthening and project management consultants (ISPMC) team to monitor overall compliance with the environmental management plan (EMP). Outline terms of reference of the environmental specialists are in Annex. The specialists in the consulting team will also prepare the strategic environmental assessment during the first tranche, and environmental assessments including environmental management plans for the subsequent tranches. Project staff, as well as contractors will be trained on implementation of the EMP. Compliance with the EMP will be part of the work contracts as separate bill in the Bill of Quantities following the ADB funded predecessor project, Jamuna-Meghna River Erosion Mitigation Project (JMREMP) practice. A follow on study conducted in 2011 concluded that the protected banks supported more fish species than unprotected banks, and overall the use of geo textile bags had a positive impact on water resources, fisheries, algae community and the socio-economy. Environmental monitoring and compliance with the EMP will be regularly reported as part of the quarterly reporting. The environmental compliance officer and the specialist consultant will maintain liaison with the DOE and the Department of Fisheries (DOF) and other relevant offices.

II. PROJECT ACTIVITIES AND ANTICIPATED ENVIRONMENTAL IMPACTS

A. Project Activities

14. FREMIP will expand the riverbank protection methods developed in the earlier JMREMP to other river reaches. Under FREMIP, siting of riverbank protection works is based on strategic planning, guided by predictions of long-term morphological trends. This is an improvement on the ad hoc and piecemeal protection of erosion-damaged sites that is currently practiced. In addition, FREMIP will construct or rehabilitate flood embankments and associated gated structures, leaving major tributaries and distributaries open, to mitigate impacts during greater flood events while still allowing lower levels of beneficial flooding to occur.

15. The FREMIP program area encompasses the Jamuna River reach starting below the Jamuna Bridge and the proposed Ganges Barrage site, down to Chandpur on the Lower Meghna (the confluence of the Padma and Upper Meghna rivers). Downstream of the Jamuna Bridge and the Barrage sites, the Jamuna and Ganges river courses are somewhat independent of upstream river developments. The total Project area covers 9,300 km² with a total population of 10.5 million in 40 upazilas and 431 unions, with an average population density of nearly 1,600 persons per km² of floodplain land. The three high priority subreaches along lower Jamuna and upper Padma (named JRB-1, JLB-2, and PLB-1) have a total area of around 2,500km² with a population of 2.9 million in 12 upazilas and 107 unions. The average population density is around 1,600 persons/km².

16. Of the three outputs under the investment program, Output 1 will give rise to potential negative environmental impacts. Therefore description on project activities is limited to Output 1.

17. Typical physical works associated with output 1 activities comprise the following:

- (i) Riverbank Protection: Construction of riverbank protection typically involves the following activities. Labor sheds are constructed and stocked with construction materials (sand, cement, wood, shuttering materials etc.). Sanitation facilities for work crews are constructed. River bank slopes are developed with earth. Cement concrete (CC) blocks are cast or manufactured and guard walls constructed. Geo-textile bags are placed in a systematic manner onto the underwater slope, while the slope above water is protected by CC blocks placed on the prepared slope covered with a geotextile filter.
- (ii) Embankments: Embankment construction/rehabilitation typically involves the following activities. Labor sheds are constructed and stocked. Sanitation facilities for work crews are constructed. Under the supervision of the engineer in charge, the embankment alignment is marked out per engineering designs. As required by resettlement plans, resettlement activities are undertaken in the embankment footprint such that inhabitants are relocated and structures emptied out, such that they are no longer in use and can be dismantled and removed. Surface vegetation is cleared and earth is excavated from borrow pits or the river. To achieve the desired rehabilitated or new embankment section, excavated earth is dumped and then compacted, sloped, and shaped in layers. When the design section has been reached, if included in the design the embankment slope is turfed, watered, and fertilized to establish a layer of biological protection from runoff surface erosion. Some of the embankments will include paved roads.

- (iii) Drainage Sluices: Pre-construction activities include labor shed construction and stocking with construction supplies; assembly of construction equipment and tools; construction of sanitation facilities; and construction site preparation (implementation of required resettlement actions and removal of buildings and surface vegetation). To allow the construction site to be dewatered while maintaining the natural flow of water around it, ring bunds and diversion channels are constructed. Foundation construction involves excavation and CC and RCC works. Construction of above-ground works involves cutting, bending and binding of rods and the preparation and placement of CC blocks. Approach roads are constructed; gates and hoisting devices fitted; and gates painted. Per design, the sluice intake and outfall are constructed; CC blocks emplaced for river training works; and upstream and downstream protection and pitching works provided.
- (iv) Afforestation and/or vegetation: Afforestation and/or vegetation may be conducted on land side slopes and toe of the flood embankments, as part of livelihood support for local communities including project affected persons. Species for afforestation and/or vegetation will be selected based on preference of local communities, in consultation with BWDB and other relevant government agencies, to ensure that the species are suitable for livelihood support and for protecting embankment from surface erosion by high rainfall. Afforestation activities include establishing a temporary nursery to ensure seedling availability and seedling plantation at recommended intervals.

18. The following table provides probable impacts associated with the above activities. This table is only meant as a guide, and environmental assessments will be conducted for each tranche detailing impacts specific to subsequent tranches.

| Activity | Potential Impact | Mitigation Measure |
|--|-------------------------|---|
| Movement of construction vehicles and operation of construction equipment and other activities | Noise and air quality | <p>Cover construction materials with eg polythene during transportation and storage</p> <p>Sprinkle water on open work surfaces to control dust generation as and where required.</p> <p>Use and maintain vehicles equipped with adequate, functioning noise abatement</p> <p>Locate noise-generating activities away from noise-sensitive areas (hospitals; settlements)</p> <p>Discuss with local population before starting any construction activity and address any complaints promptly</p> <p>Burning of waste materials for disposal, particularly oil and petroleum wastes, rubber, plastics and similar materials will not be permitted.</p> |

| Activity | Potential Impact | Mitigation Measure |
|--|--|---|
| | | Concrete batching and mixing areas, asphalt (hot mix) plants, or other manufacturing or production facilities shall be sited at least 500m from the nearest habitation. Emission outlets shall be fitted with pollution control devices |
| Rehabilitation/construction of embankments and placing of geo bags and CC blocks | Dredging of rivers to obtain sand for embankment construction will result in temporary reduction in river water quality due to sediment mobilization | Dredging operations to be done during dry season in approved areas without destroying used char land |
| | Impacts on local fish habitat, biodiversity, and production, due to temporary damage to seasonal marginal vegetation turbidity; and disturbance | <p>Selection of sites for dredging to avoid river beds with rocks, stones and boulders which serve as habitat for endemic species. All sites should be screened to ensure that there is no critical or natural habitat. If the area is a critical habitat dredging should not be undertaken at the site. If it is a natural habitat, the environmental assessment shall take into consideration the requirements of ADB's safeguard policy statement 2009 and government policies, and any activities proposed shall be in line with these policy requirements.</p> <p>Dredging activities not to be undertaken during spawning of different fish species.</p> <p>Dredging operations to be done during dry season in approved areas without destroying used char land.</p> |
| | Impact on drainage and water logging | <p>Embankment design to incorporate sufficient and appropriate drainage measures. (installing sluice gates or regulators)</p> <p>Sluices and outlets to drain water shall be operated by or involving local communities to ensure community requirements are met.</p> |
| | Impact on flood plain fisheries | The connectivity of beels/ lowlands with rivers for growth, and propagation of fish species should be re-established when rehabilitating |

| Activity | Potential Impact | Mitigation Measure |
|---|--|---|
| | | existing embankments through provision of regulators. |
| | Impact on wetlands | Preserving the biodiversity of some wetlands after construction of new embankments through community driven wetland biodiversity activities and appropriate operation of gated structures (sluiceways and regulators) |
| | Socio-economic impacts – negative impacts due to loss of land and livelihoods along embankment trace Positive impacts are reduction in damage to infrastructure, crops and livelihoods due to flooding. | Impacts related to loss of livelihoods and land covered under the resettlement framework and resettlement plans to be prepared under each tranche. |
| Construction activities including construction of CC blocks | Impact on river water quality | Sites for establishment of CC blocks to include adequate settling ponds prior to discharging into streams/rivers/water bodies. Washing of vehicles shall not be permitted in streams but only in specially designated and equipped areas. Use of temporary silt fences during construction activities to minimize sediment transport into streams/rivers/waterbodies. |
| Establishment of worker camps | Potential conflicts with local population | Discuss with local population prior to identifying sites for construction camps |
| | Impact on land and water resources due to improper waste disposal | Adequate sanitation facilities and solid waste management provided on site. Provision of separate male and female toilets. Sites restored after completion of work. |
| | Impact on health and safety of workers | Ensure worker camps are established following government norms. |

| Activity | Potential Impact | Mitigation Measure |
|----------|------------------|---|
| | | (i) an appropriate number of tubewells will be installed to supply water for construction and safe drinking water to laborers and the construction camps, (ii) latrines with septic tanks will be provided. Tubewells will be tested for arsenic and marked accordingly (green/red for safe/unsafe) and (iii) regular health and safety programs to be held for workers |

III. ENVIRONMENTAL ASSESSMENT

19. The BWDB will be responsible to prepare future tranches including environmental assessment reports as outlined in this framework. The environmental specialists of the ISPMC team will support the PMO of the BWDB to screen the sub-projects to determine category of project based on ADB's SPS 2009 (or latest version, if available) and Government of Bangladesh's requirements. Following initial screening the BWDB will obtain ADB's endorsement of the proposed category.

20. In addition to the environmental assessments for sub-projects in future tranches, during tranche 1 a Strategic Environmental Assessment (SEA) will be conducted. The aim of the SEA will be to assess the impacts of the investment program as a whole taking into consideration other factors and development plans that are known and likely to be implemented in the future. The SEA will focus on key issues, which will include changes in river morphology, access to agriculture, impacts on livelihoods, fisheries, land use, and community resilience to disasters. Key issues will be identified through a scoping exercise with key stakeholders. Cumulative impacts of riverbank protection structures on downstream riverbank alignment will also be examined.

A. Preparation of Environmental Assessments

21. The Terms of Reference (TOR) for the environmental assessments, meeting GOB's and ADB's requirements, will be developed by the environmental specialists of the ISPMC. Once the TOR's for the necessary environmental assessments are endorsed by ADB and the DOE, the environmental specialists will prepare the draft environmental assessment reports including EMPs and submit to BWDB. BWDB will submit the draft reports to ADB for review and approval in the course of ADB's approval procedures for future tranches. BWDB should also ensure that necessary approvals are obtained from the DOE before the submission of the Development Project Proposal/Proforma to the Planning Commission for approval of individual tranches. The EIA clearances from ADB and DOE will be obtained before commencement of physical works. An outline TOR of the environment specialists is attached (Annex).

22. The EIA/IEE will consider all potential impacts and risks of the project on physical, biological, socioeconomic (occupational health and safety, community health and safety, vulnerable groups and gender issues, and impacts on livelihoods through environmental media) and physical cultural resources in an integrated way. Impacts and risks will be analyzed in the context of the project's area of influence, which encompasses (i) the primary project site(s) and related facilities (ii) associated facilities that are not funded as part of the project; (iii) areas and communities potentially affected by cumulative impacts; and (iv) areas and communities

potentially affected by impacts from unplanned but predictable developments caused by the project. Environmental impacts and risks will also be analyzed for all relevant stages of the project cycle, including preconstruction, construction, and operations, and post-closure activities such as rehabilitation or restoration. The assessment will identify potential transboundary effects, such as air pollution, increased use or contamination of international waterways, as well as global impacts, such as emission of greenhouse gases and impacts on endangered species and habitats. The environmental assessment will examine whether particular individuals and groups may be differentially or disproportionately affected by the project's potential adverse environmental impacts because of their disadvantaged or vulnerable status, in particular, the poor, women and children, and Indigenous Peoples.

23. **Environmental Management Plan:** EIAs/IEEs prepared under the project will include EMPs that specify monitoring requirements for potential environmental impacts. Monitoring is aimed at assuring performance of mitigation measures, and involves specifying the method of measurement, relevant indicators, frequency of monitoring, and cost and responsible party for undertaking the monitoring. The EMP will form part of the contract documents and if required will be updated during the construction phase. All bid documents will include a requirement to incorporate necessary resources into the contractor's bid to implement mitigation measures specified in the EMP. Where unanticipated environmental impacts become apparent during project implementation, the EIA/IEE including EMP will be updated.

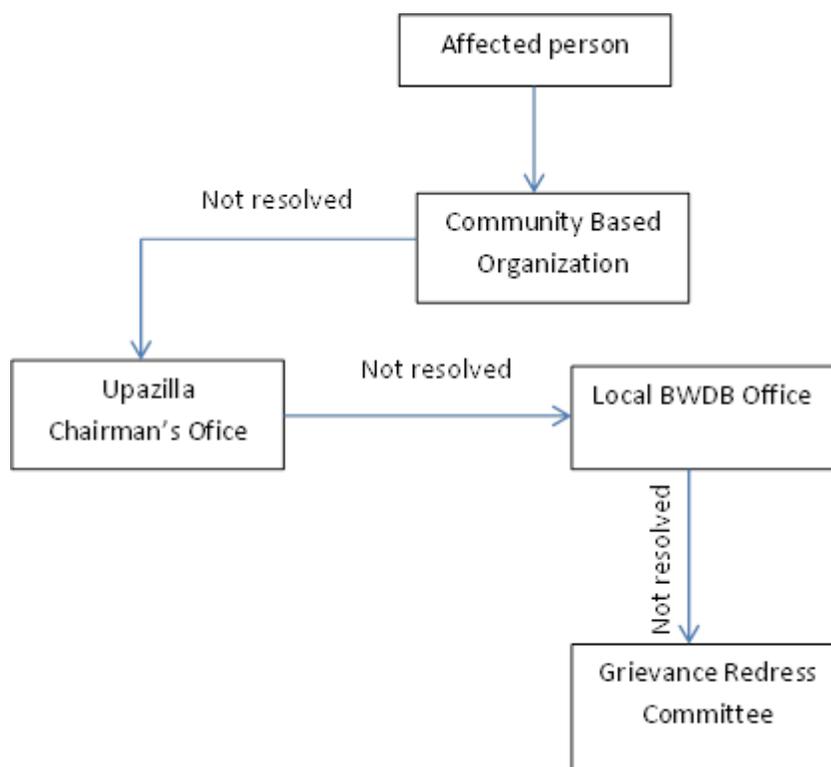
IV. CONSULTATION, INFORMATION DISCLOSURE, AND GRIEVANCE REDRESS MECHANISM

24. During planning and implementation, project beneficiary and affected communities shall be consulted, to ascertain their concerns and needs. The BWDB shall conduct meaningful consultation with affected people and other concerned stakeholders, including civil society, and facilitate their informed participation. The consultation process will (i) begin early in the project preparation stage and be carried out throughout the project cycle; (ii) provide timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (iii) be undertaken in an atmosphere free of intimidation or coercion; (iv) be gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and (v) enable incorporation of all relevant views of affected people and other stakeholders into decision making. The consultation process and its results will be documented and reflected in environmental assessment reports. Project information shall be disseminated in local languages and environmental assessment reports will be made available to project affected persons at publicly accessible places. All environmental documents are subject to public disclosure; therefore, these documents will be made available to any member of the public, if requested, and made available on ADB's web site.

25. The BWDB will determine a suitable grievance redress mechanism to address concerns related to environmental and social safeguards. The grievance redress system will include a system by which parties affected by project activities, could raise their concerns to contractors, relevant government officials, and officers of the BWDB.

26. Stakeholders with concerns have the option of contacting community-based organizations formed during implementation; the upazila chairman's office; and/or the local BWDB divisional office. Stakeholders may present complaints verbally or in writing. Complaints received will be logged and documented. Complaints received by community based organizations CBOs will either be promptly resolved locally if possible or referred to the upazila chairman's office. Similarly at this level, complaints will be promptly resolved or referred to the

local BWDB section office (sub-project management office). If not resolved at this level the complaints will be forwarded to the grievance redress committee. A grievance redress committee will be established including representatives of government, BWDB, affected persons and others as maybe considered necessary. The committee should establish a procedure on how complaints will be received and resolved, and have regular meetings to discuss and resolve complaints. The meeting will be open to the public, and decisions will be recorded and distributed among those present. All records of the committee meetings and how grievances were addressed will be maintained by the respective section office, and the public will have access to these records. When obtaining the information from the complainant, either in verbal or written form, the receiving party should complete a Grievance Action Form (GAF). At a minimum, the information to be recorded in this form will include (i) basic information about the affected person (name, address, contact number); (ii) category of grievance filed (legal, social, environmental, technical/engineering, financial, etc.); (iii) detailed description of grievance; and (iv) type of action taken. The GAF will be filled out by the person receiving a grievance and signed by the affected party and the receiver of the complaint. The affected party will receive a copy signed by both. Each sub-project management office will have on display a sign/notice board providing the general public on the contact details of staff responsible for registering complaints.



V. INSTITUTIONAL ARRANGEMENT AND RESPONSIBILITIES

27. The BWDB will establish a PMO in Dhaka and three sub-project management offices (SMO) in the divisional offices located in the project sites areas of Koitola, Tangail, and Manikgonj.¹ The PMO will be headed by a Project Director with the powers of Additional Chief

¹ Fourth or subsequent SMOs will be established in other divisional offices, if other priority reaches would be selected for the second and subsequent tranches.

Engineer/Chief Engineer, supported by two superintending engineers, four executive engineers, four sub-divisional engineers and one assistant engineer. All PMO staff will work full time on the project. One of the executive engineers will be responsible for environmental management, and will work with consultants to prepare the EIA/IEEs and monitor and supervise activities in the project sites. Each SMO will be headed by an executive engineer who will be supported by a sub-divisional engineer, an assistant engineer, and three sub-assistant engineers. In the SMO, the sub-divisional engineer will be responsible for day to day management of environmental concerns (where possible engineers experienced in environmental management will be selected).

(i) BWDBs' Responsibilities (supported by consultants)

- Determine the environmental category of subsequent tranches and obtain ADB's endorsement on classification.
- Prepare relevant EIA/IEE reports, including EMPs for sub-projects classified as category A/B, and submit to ADB and DOE as required for review.
- Obtain environmental clearance from ADB and DOE for environmental compliance before awarding any civil works contracts for that subproject.
- Ensure mitigatory measures stated in the EIA/IEE's are incorporated in the project design and EMP requirements are described in the bidding documents. EMP including any specific requirements of DOE shall be incorporated in the contract documents.
- During implementation ensure that EMP is been implemented and recommend corrective measures for any unforeseen impacts.
- ensure that any grievances from any stakeholders are adequately addressed
- Submit periodic monitoring reports to ADB and GOB.

(ii) ADB's Responsibilities

- Review proposed classification of tranches and IEE/EIA reports.
- Disclose the findings of EIA/IEEs in accordance with ADB's Safeguard Policy Statement, 2009.
- Monitor the implementation of mitigation measures through project review missions, and conduct environmental performance monitoring as necessary.

28. **Training and Capacity Development.** Training and capacity building of various parties involved in the implementation and monitoring of project activities would need to be undertaken. The environmental specialist (international and national) will conduct periodic training and awareness on ADB environmental procedures, monitoring of EMP implementation and reporting requirements to project staff attached to PMO and SMOs. The environmental specialist will also conduct an orientation to the contractors at start of contract on implementation of EMP. While the BWDB employs some environmental staff in the planning wing, it does not have a dedicated environmental monitoring cell. Environmental management of projects has been monitored through consultants and staff dedicated to project implementation. Given the quantum of work managed by BWDB, through its own resources and donor funds, the possibility of establishing a permanent cell to undertake environmental planning and monitoring will be explored under Tranche 2 of the investment program. The institutional assessment will be undertaken during Tranche 2, and support, if necessary, to help establish the unit and train staff will be undertaken in Tranche 3.

VI. MONITORING AND REPORTING

29. The PMO and SMOs, under the guidance of the environmental consultants, will monitor implementation of the EMP. The contractor will submit results of environmental monitoring in its progress reports to the PMO. Quarterly progress review reports submitted by BWDB to ADB should include the progress of environmental monitoring and highlight any other environmental issues that may have arisen during implementation, and measures taken to address the issues. In addition BWDB shall submit semi-annual environmental monitoring reports for Category A projects, and annual monitoring reports for Category B Projects to ADB, and DOE. The PMO shall ensure that all environmental assessment documents, including the environmental monitoring reports, are maintained systematically as part of the project specific records. Environmental Monitoring reports will be made available to the public and will be posted on ADB's website. Project budgets will reflect the costs of monitoring and reporting requirements.

OUTLINE TERMS OF REFERENCE FOR ENVIRONMENTAL SPECIALISTS

A. International Environmental Specialist

1. The consultant must have a graduate degree, preferably post-graduate degree, in environmental sciences, environmental engineering, or other relevant natural science, and have at least 10 years of experience undertaking similar assignments, preferably in South Asia. The main tasks of the specialist will include:

- (i) Taking the lead in preparing a strategic environmental assessment and environmental assessments for the subsequent tranches to meet ADB's and GOB's environmental safeguard requirements.
- (ii) Providing advisory support for the national environment specialist in: (a) training and capacity building of BWDB staff on environmental management, supervision, reporting and monitoring of implementation of environmental management plans (EMP); and (b) orienting contractors on implementation of EMP.
- (iii) Assisting PMO on reporting requirements on environmental monitoring to ADB and GOB.
- (iv) Assisting PMO to engage consultants/NGOs for the mitigation actions, and supervising the mitigation activities of the consultants/NGOs.
- (v) Recommending any corrective actions on any unforeseen environmental impacts.
- (vi) Support the team leader to identify requirements to establish an environment cell in BWDB.

B. National Environmental Specialist

2. The consultant must hold a graduate degree, preferably post-graduate degree, in environmental sciences, environmental engineering, or relevant social science, and have at least 7 years of experience in undertaking environmental assessments and/or monitoring environment management plan activities. Experience in externally aided projects will be given advantage. The main tasks will include:

- (i) Support the international environment specialist to prepare the strategic environmental assessment and environmental assessments for the subsequent tranches to meet ADB's and GOB's environmental safeguard requirements.
- (ii) Implement: (a) training and capacity building of BWDB staff on environmental management, supervision, reporting and monitoring of implementation of environmental management plans (EMP); and (b) orienting contractors on implementation of EMP.
- (iii) Support the international environment specialist in assisting PMO to engage consultants/NGOs for the mitigation actions, and supervising the mitigation activities of the consultants/NGOs.
- (iv) Periodic supervision of construction activities for ensuring appropriate implementation of environment management plans.
- (v) Supporting BWDB on reporting requirements on environmental monitoring to ADB and BWDB.
- (vi) Recommending any corrective actions on any unforeseen environmental impacts.