

**Ministry of Communications
Government of the People's Republic of Bangladesh
Bangladesh Bridge Authority**

PADMA MULTIPURPOSE BRIDGE PROJECT

Safeguard Compliance: Environment

QUARTERLY PROGRESS REPORT – 02



Co-financiers:



April 2011

PADMA MULTIPURPOSE BRIDGE PROJECT

Safeguard: Environment

Quarterly Progress Report No. 02 **January– March 2011**

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Project Profiles

Executing Agency: Bangladesh Bridge Authority

Maunsell/AECOM in association with SMEC International Pty Ltd,
ACE Consultants Ltd., Bangladesh

Financed by:

World Bank (WB)
Asian Development Bank (ADB),
Japan International Cooperation Agency (JICA)
Islamic Development Bank (IDB).
Government of Bangladesh (GOB)

Project Main Components:

- 6.15 km long double deck steel composite bridge
- About 12 km approach road
- About 12 km river training works
- Bridge End Facilities

RAP Implementing- Non Governmental Organization

Christian Commission for Development in Bangladesh (CCDB)

Acronyms

BBA	Bangladesh Bridge Authority
CCL	Cash Compensation under Law
DOE	Department of Environment
EAP	Environmental Action Plan
ECC	Environmental Clearance Certificate
ECP	Environmental Code of Practices
EIA	Environmental Impact Assessment
EMMP	Environmental Management and Monitoring Plan
PAP	Project Affected Person
PMBP	Padma Multipurpose Bridge Project
POE	Panel of Experts

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EXECUTIVE SUMMARY

This Quarterly Progress Report -02 highlights the environmental impacts of the Project due to its associated activities for realization of the Padma Bridge, which covers the month of January 2011 to April 2011. The following construction activities of the project under the National Competitive Bidding (NCB) contracts are being accomplished during this period

- Infrastructures of civic amenities at four resettlement sites- RS2, Jasaldia ; RS3- Kumarbogh; RS4- Naodaba; RS5- Bakhorakandi
- Construction Yard-1, Mawa
- Construction Yard-2, Janjira-
- Service Area -1
- Service Area -3

With an increase in construction activities of the project, the environmental protection is an important component. Minimizing the adverse impact of the environment as well as ensure the health and safety compliance are main critical activity.

Major works regarding environment protection were undertaken are as follows.

- Reviewed the drainage design at Resettlement sites and recommendation for revision
- Conducted meeting with ADB environmental team and according to their advice an Environmental Management Committee was conducted. Formation of various committees on environmental issues is being complied.
- Reviewed and made comments on the EAP Cumulative Impact Assessment Report
- Meeting with WB environmental team and their advice regarding tree plantation, biodiversity baseline survey are being complied
- Reviewed and provision of comments on the Draft Communications Strategy
- A discussion was held with ACF, forest department regarding tree plantation.
- Periodic monitoring is carried out on the environmental issues in the construction sites.
- Reviewed and made comments on the draft Environmental Assessment for Transmission Tower Report
- Terms of Reference for the External Monitoring Agency for individual third party monitoring of the implementation of SAP and EAP are prepared.
- Groundwater from the tube wells were collected from RS sites for testing of iron and arsenic by field testing kits.

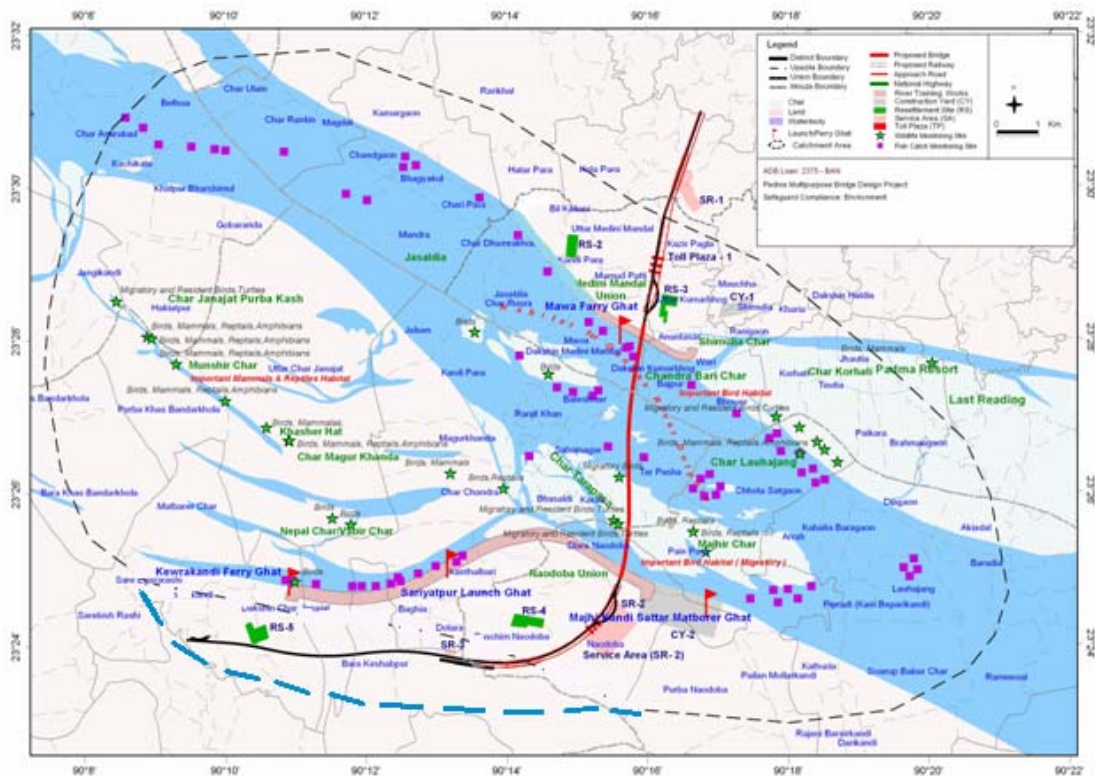
1. OVERVIEW

1.1 Project Description

The proposed Padma Multipurpose Bridge Project (PMBP) will provide a vital missing link in the national road network of Bangladesh, particularly for the southwest part of the country. Bangladesh Bridge Authority (BBA) under the Ministry of Communications is the executing agency of the Project. The Project is co-financed by the World Bank (WB), the Asian Development Bank (ADB), the Japan International Cooperation Agency (JICA), AND the Islamic Development Bank (IDB).

The bridge is designed to be an approximately 6.15 km long fixed crossing double deck composite steel truss bridge over the Padma river with provisions for four lane highway on the upper deck, and a rail line, gas pipeline, optic fibre cable on the lower deck and separate power transmission lines at downstream about 2km away from the bridge. About 12 km River Training Works and 12 km Bridge Connecting Approach Roads will also included in the bridge.

The Project area is located in the south-central part (Munshiganj, Shariatpur, and Madaripur Districts) of Bangladesh. The left bank (north bank) on Mawa side is located in Lauhajang upazila of Munshiganj district, whereas the right bank (south bank) in Janjira side located in the Janjira upazila of Shariatpur district and Shibchar upazila in Madaripur District. The Bridge is located in an area of high biological diversity in which many important and endangered aquatic species are present. The project area, especially the river banks and stabilized chars, is home for a wide variety of terrestrial and aquatic birds, and is an important area for migrating birds (winter visitors). It is expected to affect more than 1,000 ha of land, more than 76000 people, huge amount of aquatic and terrestrial habitat including plant and tress.



EA BOUNDARY

1.2 Significant Environmental issues

The quantified amounts on environmental impacts on both social and natural environment are being determined by the survey activities under the following five RAPs.

RAP-I:	Development of Four Resettlement Sites
RAP-II:	Main Bridge, Approach road and Service Area
RAP-III:	River Training Works
RAP-IV:	Construction Yard at Janjira
RAP-V:	Construction Yard at Mawa

Rap-III is being updated; a detailed survey has been conducted by the Bangladesh Institute of Development Studies (BIDS) during the reporting period as the additional land acquisition is required for the RTW due to changing of the design at the down-stream at Mawa end and up-stream at Janjira end. It is anticipated that the PMBP will bring vast positive impacts on the social environment and at the same time it will cause significant negative impacts on existing natural environment. As per updated information the main adverse impacts on the physical, the biological and the human environment are shown in Table 1.

Table 1: Updated Impacts on Environment

Environments	SI	Impacts	Unit	Number /Amount
S O C	1	Total lands		
		Acquisition lands	Ha	954
		Requisition	Ha	110.35
	Charland,	Ha	190	
I	2	Total Project Affected Persons (PAPs)	Persons	85,647
A	3	HHs losing structure (housing and commercial)	HHs	5,279
L	4	PAPs losing agricultural land	HHs	9,729
N A	5	Vegetation	No.	216,293
		Banana and Bamboo		390,805
T	6	Crop Loss	tons	24,693
U R A L	7	Fisheries		
		Estimated fish production in the project area	ton)	972
		Aquatic loss	habitat Ha	1,293
		Ponds	Ha	12
		Floodplain	Ha	793

(Source: Design Consultants, 2011)

The significant social impacts of the bridge are large land acquisition and resettlement issues. Whereas the adverse impacts on the natural resources are felling of trees and vegetation as well disturbance of aquatic biodiversity in the project influence areas. In addition during construction phase the occupational safety, noise and vibration, surface water and soil pollution, air pollution and generation of about 44 million m³ of dredge materials are also a grave environmental concern.

1.3 Environmental Action Plan

To address all severe environmental impacts an environmental management and monitoring plans are highlighted in the Environmental Action Plan (EAP) to be implemented. The main plans includes

- Dredged Material Management Plan
- Emergency Response Plan
- Development of Hydro-meteorological station
- Community Environmental Management Plan of Resettlement Sites (RS)
- Public Health Action Plan
- Tree Plantation and Greenbelt Development Plan
- Biodiversity Management Plan (Wildlife baseline and monitoring, Padma protected Sanctuary, Hilsha fish migration monitoring, Visitor center, and community awareness), etc.

1.4 Project Impacts and Mitigation Measures

The major project impacts and its mitigation measures related to environmental issues are as follows

Development of Resettlement sites: Four resettlement sites (RS) with civic amenities (roads, mosque, school, health center, etc.) are proposed in both sides of the river to accommodate affected population.

-These RS will be environmentally friendly thorough providing safe water supply, sanitation, provision of disposal of solid waste, drainage facilities, roadsides plantation including a green belt and occupational health and safety at site.

Development Temporary Resettlement Site: One temporary resettlement site (TRS) with civic amenities (roads, mosque, school, health center, etc.) will be developed in Construction Yard at Janjira (RAP-IV) .

-These RS will be environmentally friendly thorough providing safe water supply, sanitation, provision of disposal of solid waste, drainage facilities, roadsides plantation including a green belt and occupational health and safety at site.

Removal of trees from Project areas: Extensive tree plantation (about 405,461 trees in about 100 hectares) will be taken up along the approach roads and in all available lands within Project components.

- 719,098 saplings of banana and bamboo will be distributed to affected community and host villages

Piling activities: Piling activities should be restricted in the whole river with a water column depth of 7m during March to July to avoid impacts on Hilsa migration and breeding period of other aquatic habitats.

Disturbance of Biodiversity: Create awareness among the surrounding people about the protection of wildlife, birds. Biodiversity monitoring and development of Sanctuary.

Lost of crops: Increase crop yield by introducing high yield variety crops, converting crop land and bringing barren/fallow lands.

1.5 Budget for Environmental Compliance

For the compliance of the environmental safeguard, the Project has budget about US\$ 18.70 million (excluding costs included in the contractors civil works) for the EMMP which includes

- (i) Contractors budget for environmental protection and mitigation measures,
- (ii) PIU budget for implementation of environmental enhancement plans and compensation measures,
- (iii) Environmental consultants for CSC,
- (iv) Institutional strengthening and capacity building, environmental monitoring during O/M,
- (v) During O/M phase of the project an environmental enhancement plan and compensation measures including community environmental management plan, and
- (vi) Emergency response plan.

In addition, an environmental enhancement fund will be developed by collecting 1% from vehicle tolls to protect environmental resources and Operation and Maintenance (O/M) of environmental enhancement facilities.

2 ACTIVITIES

2.1 RAP Survey

The environmental impacts (both social and natural) are being determined by the survey activities under the five RAPs. Survey work of RAP I and RAP II already completed and detailed survey has been conducted by the Bangladesh Institute of Development Studies (BIDS) and CEGIS during the reporting period for the following RAP.

RAP-III: River Training Work

The RAP-III (River Training Work) was prepared based on PPTA data by detailed design consultants and duly concurred by the co-financiers along with other safeguard documents. A total of 508.55 ha land have been acquired which will displace about 3300 households. Presently, the additional land acquisition is required for the RTW due to changing of the design at the down-stream at Mawa end and up-stream at Janjira end. In the circumstances, a detailed socioeconomic survey has been conducted by the Bangladesh Institute of Development Studies (BIDS) during the reporting period. BIDS will generate data in tabular form and provide it to the DDC by April 2011 for updating of the RAP-III. DDC will update the RAP and hopefully it will be on board for implementation by first of June 2011;

RAP-IV: Janjira Construction Yard

RAP-IV has been prepared for Janjira construction yard (JCY)- a temporary requisitioned area for facilitating construction of the main bridge. A temporary resettlement site (TRS) has also been designed for relocation of the displaced households from the TRS for 6 years. Land filling and other civil works have been started for development of the JCY. TRS will be ready for relocation prior to displacement of the affected persons. All types of civic amenities including community structure will be provided to the TRS by the project.

RAP-V: Mawa Construction Yard

RAP-V has been prepared for Mawa construction yard at the Mawa end for facilitating construction of the main bridge. The area is mainly char land and it is attached to the main land in a certain portion. A total of about 82 ha land has been acquired for this construction yard. A detailed survey of the land owners was carried out and accordingly a database has been developed by the CEGIS.

2.2 Preparation of documents under Environmental Action Plan (EAP)

Another volume of EAP has been prepared by the Detailed Design Consultants (DDC) in March 2011 as mentioned below.

Vol 6 : Cumulative Impact Assessment Report

Earlier the EAP includes the following documents:

- Vol 0 : Executive Summary (Technical summary of EAP)
- Vol. 1a : Final Report on Environmental Assessment for Resettlement Sites
- Vol. 1b : Final Report on IEE for Resettlement Sites
- Vol 2 : Environmental Impact Assessment Report
- Vol 3 : Environmental Quality Baseline Monitoring Survey Report

Vol 4 : Ecological Report

Vol 5 : Factoring Climate Change Considerations in the Design

The Design Consultants will finalize the EIA including EAP by June 2011. The final report will be prepared on the basis of the survey data of the RAP-IV and RAP-V for the development of the construction yards at Janjia and Mawa sides respectively, as well as updating survey of the RAP- III for the river training work.

2.3 Reviewed the Drainage Design at Resettlement Sites

Four resettlement sites have been visited along with the specialist of Design Consultant to find out a mitigation measure for preventing water logging of the resettlement site as well as the surrounding catchment area due to storm water runoff. Accordingly revised drainage plans are being prepared by the Design Consultant. Observations along with mitigation measures are as follows but not limited to:

- Existing borrow pit canal between road and site should be re-excavated
- Make a drainage facility all around the sites.
- Re arrange the Plot layout plan as convenient

2.4 Meeting with ADB

A discussion meeting on updating of EAP was held with ADB environmental team on 10 February 2011 at BBA conference room. The following issues were discussed in the meeting and accordingly compliance column is shown in table below

Issue and compliance on ADB's observations

Sl. No.	Items / Issues	Compliance
1.	EIA Report	
1.1	Cumulative Assessment Report needs to be completed & sent to ADB asap.	Sent to ADB and other co-financiers
1.2	Noise, air & water quality at some locations of the project area have exceeded the DoE standard. Baseline monitoring of these parameters need to be measured/tested prior to commencement of construction.	Baseline monitoring will be accomplished by CSC
1.3	There are apparent discrepancies between CSC and MSC TORs with regarding to environmental baseline monitoring. Therefore, further review & updating of TORs may be required. Baseline monitoring needs to be included in TOR of CSC & MSC if it is not included initially.	Environmental baseline monitoring will be ensured in CSC's Contract during negotiation.
2.	Resettlement	
2.1	Checklists prepared by DC and BBA for environmental and RS site monitoring should be harmonized and simplified for future monitoring.	Harmonized and simplified monitoring form is prepared to be followed.
2.2	Quarterly Progress Reports on SAP and EAP should be	Quarterly Progress Report

	prepared separately and submit to all co-financiers within 30 days of the end of each quarter (e.g. April, July, October & December).	is being sent as per schedule.
3.	Institutional Setup	
3.1	Role and responsibility of the EMC should be further clarified. Also schedule for the next EMC meeting should be fixed soon.	Role and responsibility of the EMC is clarified and a meeting will be held on 13 April 2011.
3.2	Spoil Management Committee (SMC) for managing river bed spoil (sand) should be formed prior to the award of contract for RTW.	The (SMC will be formed to 2-3 months prior of the Contract Award
3.3	GRCs (local and project levels) will deal both social and environmental grievances and disputes. In case of any technical nature of environmental grievances, GRCs will receive help from CSC/MSD experts.	Terms of reference of GRC has been prepared accordingly.
3.4	Tree plantation at RS sites will be done under SAP (by BBA and Forest Department). A separate NGO will be hired for tree plantation in the Approach roads, service area, bridge end facility and host villages.	Tree plantation at RS sites will be done by Forest Department through community based participatory approach. A discussion was held with Forest Department and a proposal is being prepared.
3.5	Institutional setup of CEMC for each RS-their function & schedule should be ready prior to relocation of the affected people to RS.	Will be complied accordingly.
3.6	Biodiversity Management Plan consists of mainly baseline survey of wildlife and establishment of protected sanctuary. Discussion with DoE regarding this matter especially "sanctuary" needs to be carried out.	The ToR and EoI of Biodiversity Management Plan were sent to WB for their concurrence. This issue will be discussed with DOE and other concern organizations in the EMC meeting.
3.7	Due to the nature and complexity of the social/environmental aspects, series of workshops among the key players (CSC, MSC, BBA, etc.) should be conducted during the implementation for better coordination and to facilitate timely project implementation. The first workshop should be conducted as soon as the CSC is mobilized.	Will be complied.
3.8	Induced impacts on environment and social issues should be addressed properly. A management plan for in-migrants (e.g., local workers, traders, suppliers etc.) would be prepared by BBA as a matter of "good practice."	Will be complied.
3.9	Environmental Enhancement Fund (EEF): one percent of toll may not be adequate for implementing all environmental activities as mentioned in EAP. BBA should also look for other sources, if required.	This issue is being examined. If 1% toll is not adequate, than BBA will look for other sources.

2.5 Reviewed Cumulative Impact Assessment Report

Volume 6 namely Cumulative Impact Assessment Report of EAP has been prepared by the Detailed Design Consultants (DDC) in March 2011. After an initial review this draft report has been sent to all Co-financiers.

2.6 Meeting with World Bank Environmental Team

A discussion meeting on EAP was held with World Bank environmental team on 15 March 2011 at project office regarding tree plantation, biodiversity baseline survey are being complied. The issue raised in the meeting and updated progress on these issues are summarized in the table below.

SI No	Issues	Progress
1	Procurement process for hiring NGO of the Biodiversity Management Plan and establishment of a protected sanctuary might be needed a long time which result the missing of preconstruction baseline survey. A separate TOR for baseline survey may be prepared and procure reputed NGO/Consultant by single sources method	According a ToR and budget is being prepared
2	Tree Plantation at resettlement sites by Forest Department.	A meeting will be arranged with Chief Conservation of Forest in early April
3	Committees for the implementation of various plans under EAP	A time line has been prepared

2.7 Environmental Monitoring of the Construction Activities at RS

The amenities (amenities like schools, health centers, religious places, markets, playground, roads, ponds etc) at the four resettlement sites are being constructed with other environmental management facilities in order to maintain the resettlements sites (RS) in a sustainable and hygienic manner. Periodic supervision is being conducted for monitoring and ensuring the compliance of EMP during construction work (Monitoring Checklist in Annex-2).

Following measures yet to be improved for the EMP compliance at resettlement sites and the measures should be taken immediately

- Improving the construction camp
- Ensure Personal Protective Equipments (PPE)
- Drinking water quality -Laboratory test report required
- Disposal of solid waste
- Drainage Congestion
- Ensure no child labour or any child in the site for safety purposes.

2.8 Reviewed the Draft EA for Transmission Tower Report

A draft Environmental Assessment for Transmission Tower Report is prepared by Design Consultant and submitted to the Project Director on March 27, 2011, Safeguard Unit of BBA reviewed and commented on it and accordingly response matrix is prepared by the design consultant as attached in Annex-1.

2.9 TOR for the EMA for External Monitoring

As per provision of the SAP and EAP documents an external monitoring agency (EMA) will need to be functional for independent monitoring of the SAP and EAP implementation. Terms of reference (TOR) of the EMA have been prepared and expression of interest (EOI) will be sought by April 2011. Two professional from environmental field has been provisioned in the EMA team for monitoring compliance of the environmental issues of the project.

2.10 Groundwater Quality

Safeguard Unit, BBA procured the Iron (Fe) test Kit and Arsenic (As) test Kit for purposes of water parameters (Fe and As) test at field. Four groundwater samples were collected from the tube well located in four resettlement sites and tested. The test results indicate that the concentration of Arsenic and Iron were within the limit of drinking water standard. .

2.11 Reviewed the EMP and ECPs in the Bidding Document

The relevant part of the Bidding document has been reviewed by the BBA's safeguard division and ensure to incorporation the relevant clauses in the bidding document for implementation of compliances under EAP. The Contractor can also prepare a 'Construction Environmental Action Plan' (CEAP) demonstrating the manner in which the Contractor will comply with the requirements of ECPs and the mitigation measures proposed in the EMMP of the EIA Report.

3 UPCOMING ACTIVITIES

3.1 Hiring NGOs

Following NGOs/ consulting firms are needed to hire for implementation of various plan under EAP for the purposes as described below. The CSC and Safeguard Department of BBA are responsible for supervision the activities of implementing NGOs / consulting firms for EAP implimentaion.

- NGO (Community Development NGO) to support the CEMC during at RS sites O/M stage.
- Forest department for plantation at all RS, AR and RTW.
- NGO to undertake this work under the supervision of Forest Department.
- NGO for Biodiversity Management Plan consists of mainly baseline survey of wildlife and establishment of protected sanctuary, visitor center
- NGO or private institute experienced in agriculture or government agriculture research institute like BARI (Bangladesh Agriculture Research Institute) for training sessions for the interested farmers/unemployed youth and others
- Consulting Services for Capacity Building in Environmental Management and Monitoring
- Consultancy Services for Environmental Management System
- Consultancy Services for development of MIS/GIS

3.1.1 NGOs/firms hiring for MIS/GIS,

Also, the Project Implementation Unit (PIU) of BBA is planning to establish and maintain MIS system in the implementation of the Padma Multipurpose Bridge Project. The PIU will hire MIS specialists for services of development and maintenance of MIS system under the EMP. Under the project a number of MIS will be developed, specifically, MIS for the land acquisition and resettlement, EMP, and project management.

The ToR was prepared for the following objectives

- (i) Reserve back-end architecture for Administration purposes, including the creation, modification, and updating of data in the MIS.
- (ii) Prepare a front-end to the data in a way that would allow for intuitive navigation and search functionality in the MIS.
- (iii) Present all data in their objective forms, including text, images, audio, video, and any other form of typical multimedia format.
- (iv) Implement authenticated login functionality for designated access to data and content.
- (v) Develop a state-of-the-art link with other MIS (e.g., RAP, Project Management) with a summary available in the public domain and authenticated login functionality for designated access to data and detail content.

3.2 Formation of Committees under the EAP

Following committees are proposed under the EAP for the purposes as described in below.

Committees	Responsibilities
Community Environmental Management Committee (CEMC)	<p>CEMC will be established for each RS to assist BBA in implementation of CEMP and O/M of all infrastructure facilities, such as water supply, sanitation, schools, mosque, health centers, etc. established under the Project.</p> <p>CEMP is targeted to improving the status of affected households (Ahs) and PAPs in terms of their environmental, safety, health and hygiene conditions as well as conserving and upgrading the site-specific environmental settings.</p> <p>The CEMC will be formed from the PAPs that are going to be resettled in to the RS. Each CEMC consists of the Chair, Vice Chair, Secretary and 8 members (from union parishad, upazila, respected elders, and members from various groups/professions such as farmers, fishermen/women, entrepreneurs, teachers, religious leader, and women). The Safeguard Department of the BBA will guide the CEMC during construction and operation phases of the RS.</p> <p>The duration of the CEMC will be minimum 2 years.</p> <p>An NGO (Community Development NGO) will be hired to form the CEMC just before the completion of all construction works to support the CEMC during O/M stage.</p>
Environmental Enhancement Committee	<p>An environmental enhancement of the project is that acquires habitat for preservation, or improves habitat quality, and ecosystem function above the baseline condition.</p> <p>BBA will form and setup an Environmental Enhancement Committee (EEC). The committee can consists of the following members</p> <ul style="list-style-type: none"> Chairman, Executive Director, BBA Secretary, Head of Environmental Unit, BBA Representative of Finance Unit, BBA Representative of DOE District Commissioners of the Project districts
Environmental Management Committee	<p>PIU has formed an Environment Management Committee (EMC) with experts from various national government and nongovernment organizations, universities and research institutes. PIU has constituted the EMC in April 2009 for monitoring the implementation status of the environmental activities of EMMP.</p> <p>Responsibilities of EMC are:</p> <ul style="list-style-type: none"> • To meet at regular intervals and monitor the implementation status of the environmental activities of the EMMP • To oversee the environment related activities of PMBP and take policy decisions and guide coordination of inter-departmental activities • To advise, supervise and guide activities of the EU in all environmental issues, strategies and policy matters related to PMBP

<p>Grievances Committee</p> <p>Redress</p>	<p>Established two grievances redress committees at the local level and project level for speedy resolutions of disputes; to address grievances in both social and environmental issues.</p> <p>Grievance redress committee includes</p> <ul style="list-style-type: none"> •Executive Engineer – PMBP : Convener •One representative from INGO : Member Secretary •Chairman – concerned Union Parishad : Member •Female member of concerned ward of the UP : Member •Representative of Women APs : Member •One (1) representative of APs (based on the recommendation of INGO and approved by Convener)
<p>Dredge Material Disposal Committee'</p>	<p>The committee is responsible for providing facilities at reclamation areas to allow the public to carry the materials and fixing of any nominal tariff to cover these expenses. The committee is also responsible for setup and monitoring of procedures for transport of material from reclamation areas to the shore through boats and finally to the trucks without causing any environmental degradation.</p> <p>The committee in association with representatives of local government, EU of safeguard department of BBA, contractor and CSC</p>
<p>Emergency Response Team</p>	<p>The following risks are expected. The emergency response plan will consider response/action for these risk</p> <ul style="list-style-type: none"> - Accidental Spills: - Leaks and Explosion: - Explosion due to traffic accidents on the bridge and impact on the gasmain. - Flooding: - Traffic and Transit Accidents - Terrorist Event/Threats: - Potential Erosion <p>In order to effectively implement an Emergency Response Plan (ERP) there has to be a clear organizational structure in place to oversee and coordinate all activities. An Emergency Response Team (ERT) is proposed which is the management committee that oversees the functions of the Emergency Response. And an Emergency Response Centre (ERC) or a field unit is proposed that responds to all emergency events in the field. ERT will oversee the functions of ERC in regular basis.</p> <p>The ERT is chaired by the Bangladesh Bridge Authority (BBA) and includes high level representation from the Bangladesh Army, Police Department, Fire Department, District Commissioner's Office and the Disaster Management Bureau (DMB) .</p>

3.3 Tentative Time Lines

The safeguard Unit of BBA envisaged the EIA document and prepared the tentative time lines as shown in the tabular form in below for the implementation of major activities associated with EMP in accordance with the main bridge construction schedule.

SI No	Items	Activities will be taken as recommended	Work to do	Time frame
1.	Dredge Material Management	Requisition of two Charland located in the Project area, one near Mawa (Medinimondal Char) and the other near Janjira (Majirkandi Char), are identified for dredge material disposal. Total area of these two Charland is 1,273 ha.	Survey identification and Requisition of two Charland	July 2011- October 2011
		PIU will setup a 'Dredge Material Disposal Committee'.	Dredge Material Disposal Committee'.	May 2011
2.	Tree plantation and Green area development plan	In the Resettlement Sites	Forest Department	June 2011
		Approach road and Service Areas	NGOs (Plantation Development NGO)	Immediately after completion of the works.
3.	Pre-construction: Wildlife Monitoring	Wildlife Monitoring for improved baseline establishment (Baseline): Pre-construction	Hiring organizations such as IUCN, Wildlife Society etc.	August 2011
	Padma Protected Sanctuary	Potential location will be surveyed for the development of the protected area. The eco-tourism venture is proposed for financial self-sufficiency of the proposed protected sanctuary area.	Acquisition of 1,150 ha Planning, design, and construction	Dec 2011 2012-2014
	Awareness program for the protection of wildlife	The contractors, supervisors, construction workers, local people, fishermen, farmers, school children, and the animal grazers will be made aware of the wildlife protection program. The picture of migratory birds, turtles, dolphins and other important species will be displayed to communicate the importance of protection of these species, their breeding grounds and their eggs.	Planning, design	2014
	Ecological training	By hiring organizations		

SI No	Items	Activities will be taken as recommended	Work to do	Time frame
	Visitor Center	The Visitor Center would be constructed		
4.	Wildlife Monitoring	Wildlife Monitoring for improved baseline establishment (Baseline): Pre-construction	Hiring organizations such as IUCN, Wildlife Society	August 2011
		Biodiversity monitoring -4 year during construction		
		Monitoring of Hilsa migration through catch assessment surveys during dredging		2012-2015
		Biodiversity monitoring -5 year during operation		2012-2016
5.	Environmental Quality Monitoring	Surface Water , Ground Water, Drinking Water Air Quality Monitoring, Noise Monitoring , Vibration Monitoring ,Dredged Material Quality Testing, Water Quality Testing, Riverbed Material Quality Testing (Pb, Cd, Cr, Cu, Zn, Mn, As, Se and Hg).	CSC, BBA	2011-2016
6.	Community Environment Management Plan	Community environmental management plan (CEMP) is proposed, where both operator and community will be involved to implement and monitor all community infrastructures (e.g., water supply and sanitation facilities, solid waste management, nursing of plants, roads, drainage etc.). A Community Environmental Management Committee (CEMC) is proposed for each RS to supervise the implementation of the CEMP.	An NGO focused in community environmental management (Community Development-NGO) will be hired by BBA	NGO will be mobilized about 3 months before the completion of construction works
7.	Establishment of Hydro-meteorological Station		Included in the Main Bridge Bid	

4 MEETING AND FIELD VISIT

Several site visits has been undertaken by the relevant BBA officers, members of co financiers, Safeguard team for inspections the construction of amenities at resettlement sites for ensuring the EMP. Besides, the following Meeting and Field Visit were conducted during this period.


Table 2: Meeting and Field Visit were conducted during January-March 2011

Date	Issue/Agendum
06 January 2011	Field visits to verify land survey control points at Deara Naodoba,
12 January 2011	Visited the Resettlement Sites regarding the drainage issues
17 January 2011	– Organized and conducted a disclosure meeting with the local people of Mawa for allowing Census and Land Survey for the new RTW at Mawa
07 February 2011	ADB Safeguard Mission – Kick-off meeting at BBA
08 February 2011	ADB Mission’s Field visits to the Project site
09 February 2011	ADB Wrap up Mission
18 February 2011	WB Vice-President’s visit to the project site

Response Matrix on EA for Transmission Tower Report is prepared by the Design Consultant

COMMENTS	RESPONSE
<p>General Comments</p> <p>The report stated that 60 m ROW is required for transmission lines. Though no land acquisition is required for ROW of transmission lines, it is recommended that PGCB should enter into an agreement with the landowners owning limited rights of ROW for O&M uses and restricting certain use of land that are detrimental to the safety of the transmission lines.</p> <p><i>PGCB's accountability will exclude the component which will be constructed under this project, i.e 6 platforms with pile foundation for 2 plat form with pile foundation in the middle of river and on either side on the bank. There might be needed some land acquisition and some displacement and relocation. A survey is needed of the areas for this anchoring towers construction at two sides of the river.</i></p>	<p>60 m ROW is not required for the transmission line located in the river. Only small portion of the transmission line located between banks and the anchor towers requires the ROW.</p> <p>PGCB accountability will start from O&M stage. PGCB will follow this ROW recommendation to connect the Padma's transmission line to the country's transmission network.</p> <p>Land acquisition is required for anchoring towers (25m X 25m) 625 m² on both sides of the river. From the design drawings, it is apparent that the anchor towers are located in the already acquired land for construction yard on Janjira side and in RS3 and RTW alignment on Mawa side. Hence no additional land acquisition and resettlement are required for anchor towers. During construction, based on the alignment of the transmission line, if any additional land acquisition and resettlement are required – the necessary action will be taken during implementation.</p>
<p>Some issues are stated below, can be incorporated :</p> <ul style="list-style-type: none"> • As the weighting score for environmental and social aspect is lower in case of free standing transmission line than within the bridge, hence the Need assessment and Justification and Benefit of 400 kv transmission line should clearly pointed out. • Summary of important environmental legislation and regulations for 400 kv electric transmission line is required. 	<ul style="list-style-type: none"> • The weighted score is higher for Environment for free standing transmission line. Only for social, the score is less due to requirement of more land acquisition. Environmental issues such as aesthetics of main bridge, risks due to electromagnetic fields and bird collisions are already discussed in Table 1-2, and clearly explain the environmental benefits of the free standing transmission lines. • Environmental regulations in general are given in Section 1.2 of Chapter 1 of main EIA report. Specific regulations related to

COMMENTS	RESPONSE
	<p>power sector are given below and will be provided in Section 1.2 of the main EIA report.</p> <p>The Electricity Act, 1910. Under this Act, any person can get a license to supply energy and to lay or place electric supply lines for the conveyance and transmission of energy. The licensee can open and break up the soil and pavement of any street, railway or tramway and can lay any line or do other work near other utility services, provided prior permission is taken from the respective authority. The licensee shall give full compensation for any damage, detriment or inconvenience caused. The licensee should take precautions in laying down electric supply lines near or where any metallic substance or line crosses in order to avoid the risk of electrocution.</p> <p>The Telegraph Act (1885) Part III Power to place Telegraph Lines and Posts. Under the Act, the Government can build towers on public land without giving any land compensation.</p> <p>The Power Policy, 1995. This is presently an integral part of the Energy Policy 1996. It has different policy statements on demand forecast, long-term planning and project implementation, investment and lending terms, fuels and technologies, power supply to the west zone, isolated and remote load centers, tariff, captive and stand by generation, system loss reduction, load management and conservation, reliability of supply, system stability, load dispatching, institutional issues, private sector participation, human resource development, regional/international cooperation, technology transfer and research programs, environment policy, and legal issues.</p> <p>The Energy Policy (1996). The Energy Policy provides for the utilization of energy for sustainable economic growth, supply to different zones of the country, development of indigenous energy sources and environmentally sound sustainable energy development program. The policy highlights the importance of protecting the environment by requiring an environment impact</p>

COMMENTS	RESPONSE
<ul style="list-style-type: none"> Consider the planning of future constraints (future resort, visitor centre, protected sanctuary, road and railways construction) A map and description of Grid transmission network in Bangladesh and show this missing link  National data about the countries growth in demand for energy: Bird migratory routes should be examined to avoid the interference with transmission line. 	<p>assessment (EIA) for any new energy development project, or introduction of economically viable and environment friendly technology.</p> <ul style="list-style-type: none"> Since the transmission lines are located 2 km downstream of the main bridge, there will not be any interference with future railway development. Any other future developments such as resorts, sanctuary and infrastructure development should consider the location of transmission line. Noted and will be included with the following text: <p>Bangladesh's power transmission system consists of 132 kV and 230 kV transmission networks (400 kV transmission line is also in the process of construction). Two 230 kV system connects the western Bangladesh to Eastern part of the country. Another 230 kV form a transmission ring around Greater Dhaka and a larger 230 kV ring connects main cities in central Bangladesh. There exists also a 230 kV connector linking south, southwest and northwest Bangladesh. The rest of the network is operating at 132 kV level. The 230 kV lines total 2644.5 circuit-kilometres while the 132 kV level reaches 5684.6 circuit-kilometres.</p> <p>This is irrelevant for the EA for transmission towers. More appropriate in the Technical Note on Transmission lines.</p> <ul style="list-style-type: none"> Migratory bird routes are already discussed in the main EIA report.
<p>Location Map : This map is wrong one, Final map with revised river training design are required.</p>	<p>Noted. Location map updated</p>
<p>Potential negative impacts Besides loss of crops, disruption of seasonal agricultural activities, dust and noise pollution, workers safety etc the followings impacts need to be</p>	<p>All these impacts are considered in the EMP (Chapter 8) and Environmental Code of Practices (ECP) of the Project that are applicable to all components of</p>

COMMENTS	RESPONSE
<p>highly cared.</p> <ul style="list-style-type: none"> • Placement of low slung lines near human activities may cause possible electrocutions. • The effect of Electromagnetic field (EMF) is though a concern for homes, schools and playing grounds, all habitation and structures are however excluded from the ROWS to ensure safety of people and animals from EMF as well as from direct electric shocks and “flashover”. 	<p>the PMBP. The contractors will follow the ECPs (Chapter 8 of EIA) to address all the general environmental impacts related to the construction activities of the transmission lines.</p> <p>This is not expected.</p> <p>These are already covered in the EA (section 1.4.2.3 Electric and Magnetic Fields)</p>
<p>Public consultation No meetings were conducted.</p> <p>Consultation with communities, PGCB and other government stakeholders are required regarding various common environmental and socio economic issues are required.</p>	<p>Public consultations are conducted in the project area explaining all the project activities. Consultations are held with PGCB during alternative analysis and the risks related to electro- magnetic fields are the major concerns of the PGCB.</p>
<p>Field Work Field work has not been conducted along the proposed route</p> <p>Site visit for the existing land use, the settlement pattern of the project affected people, the diversity of agricultural crops, the existing flora and fauna communities as well as the statistical data are required</p>	<p>The transmission line is located within the overall project boundary. Detailed baseline data, including, ecological and social, are collected for all the Project area and included in the main EIA report. Please note that EA for Transmission Line report is an addendum to the main EIA report, not a standalone report.</p>
<p>The EIA Team A team for the assessment is required.</p>	<p>The EIA team is already given in the revised main EIA report.</p>

Monitoring Checklist for the Construction Activities in RS of the PMBP

CONTRACT NO & LOCATION:

MONITOR (S) NAME:

CONTRACTOR NAME:

MONITORING DATES: _____
FINISH: _____,

START: _____,

Issue	Potential Environmental Impacts	Proposed Mitigation measures	Responsibilities	Complies (Yes / No)	Reason	Follow up needed	Action
Road safety	Vehicles used for material transport will have impacts on traffic safety	Flagman (Guard) for traffic management.	Implement: Contractors.				
		Road safety measures (signage, marking, signals etc.) are provided properly (if the construction activities interfere with the road traffic).					
		Employ experienced drivers for all construction vehicles.					
		Control traffic congestion and interruption of public traffic.					
		Hazards from construction traffic due loading and unloading construction materials.					
Air pollution	Air pollution by exhaust emissions from construction machinery, vehicles, asphalt plants and dust generated from road and material stockpiles.	Construction equipment will be maintained to a good standard and idling of engines will be discouraged.	Implement: Contractors.				
		Machinery causing excessive pollution (e.g., visible smoke) will be banned from construction sites.					
		All vehicles used for material transport should be properly covered.					
		Construction materials will be stored away from the residential areas and will be properly covered.					
		Asphalt plants will be located about minimum 500m away from the settlements to avoid direct impact of emissions on local settlements.					
		Dust suppression measures should be adopted like spraying of water twice daily for all haul roads including material transport.					

Issue	Potential Environmental Impacts	Proposed Mitigation measures	Responsibilities	Complies (Yes / No)	Reason	Follow up needed	Action
Noise pollution	Noise and vibrations from construction activities	Construction workers to be provided with ear-plugs.	Implement: Contractors.				
		Noise inspection will be done before construction equipment enter into construction site. All equipment shall fulfill the noise control requirements of the project. Special attention shall be taken to regular maintenance of construction equipment for their best working condition.					
		Construction is taking place at <500 m from the village or within 150m of sensitive areas such as School, Mosque health center, construction will be stopped from 21:00 to 06:00. (<50dB for residential areas).					
		Noise barriers should be provided by the contractors during construction, if the site is very close to sensitive receptors (school nearby RS3 & settlements nearby all 4 RS).					
		Noise should be maintained to DOE (Department of Environment) noise.					
Soil pollution	Soil pollution / disruption from construction activities	Proper disposal of solid and liquid wastes from the construction sites and labour camps	Implement: Contractors.				
		Proper storage and handling of construction materials and chemicals					
		Rain cuts, fills, erosion of slopes					
		Road embankment destabilization					
Water pollution	Water pollution from drainages from construction works and spillage of fuels.	Any compound or fuel containing hydrocarbons will be stored in secure and impermeable containers and away from surface waters.	Implement: Contractors.				
		All contaminated soil will be properly handled. As a minimum, hydrocarbon storage areas will be contained such that any spills can be immediately contained and cleaned up.					
		Any petroleum products used in the preparation of bitumen mixes must also be carefully managed to avoid spills and contamination of the nearby water bodies;					

Issue	Potential Environmental Impacts	Proposed Mitigation measures	Responsibilities	Complies (Yes / No)	Reason	Follow up needed	Action
		Construction sites will be equipped with sanitary latrines that do not pollute surface waters for which contractors will submit a sewage management plan;					
		No latrines are to be constructed within 10 m from the water supply well.					
		Drainage system will be periodically cleared to ensure adequate storm water flow					
	Arsenic, manganese, and iron contamination of groundwater	Depth of tube well should be up to pollution free GWL. All wells should be tested for arsenic, iron and manganese for different water aquifer before installing of casing	Implement: Contractors.				
Worker's health, safety (H&S)	Impacts on health and safety	Engage a Health, Safety and Environmental Manager (EHSM) to monitor workers' health, safety and hygiene for entire construction period	Implement: Contractors.				
		Provide PPE (helmet, safety shoes, hand gloves etc.) to all construction workers & ensure to use these PPE.					
		• Provide "First Aide Box" including all necessary medicines & equipment in site offices & camps.					
		Proper treatment of workers in case of accident during works at the site.					
		Provide adequate health care					
		Provide safe drinking water for workers					
		Proper collection & storing of waste (organic & inorganic waste separately & sell inorganic waste).					
		Dumping of organic waste at appropriate location in adequate earth holes with cover for composting.					
		Place signboard with mentioning "Safety First" at all working sites in bangle &					

Issue	Potential Environmental Impacts	Proposed Mitigation measures	Responsibilities	Complies (Yes / No)	Reason	Follow up needed	Action
		English languages.					
		Make sure that there is good drainage at all construction sites					
		Provide adequate sanitation at construction sites. 1 no. of toilet for 10 persons at site					
		Provide temporary security boundary wall (by tin or other) surrounding the RS site.					

Photographs of the Project Areas



Photo No. 1: Top soil cladding of side slope at Service Area- 3, Kutubpur



Photo No.2: Construction work of septic tank of Mosque at Bakharakandi RS5



Photo No.3: Construction Camp at Bakharakandi RS



Photo No.4: Construction work of health centre at Naodaba RS



Photo No.5: Char Mangal Majhi- the probable location for development of protected Sanctuary



Photo No.6: Internal road construction at Jashaldia Site