

# Resettlement Plan (Draft)

---

Draft as of 2 April 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 April 2014)

Currency unit	–	taka (Tk)
Tk1.00	=	\$0.01289
\$1.00	=	Tk77.60

## ABBREVIATIONS

ADB	–	Asian Development Bank
BWDB	–	Bangladesh Water Development Board
DDM	–	Department of Disaster Management
DPP	–	development project proforma/proposal
GOB	–	Government of Bangladesh
MFF	–	multitranchise financing facility
NGO	–	nongovernment organization
O&M	–	operation and maintenance
PMO	–	project management office

## GLOSSARY

Char	–	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

This resettlement plan is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature. Your attention is directed to the “terms of use” section of this website.

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.



# EXECUTIVE SUMMARY

## 1 Project Overview

The Asian Development Bank supports the feasibility assessment of a potential future flood and riverbank erosion risk management program covering parts of the main rivers of Bangladesh named Main River Flood and Bank Erosion Risk Management Program (FERMIP). The main focus is to reduce the riverbank erosion and flood risks to the adjacent flood plains while maximizing economic activities in a sustainable and environmentally acceptable manner. The FERMIP will cover the main rivers from Bangabandhu (Jamuna) Bridge and the proposed Ganges Barrage to Chandpur, as such covering around 60 km of the Jamuna, around 20 km of the Ganges, and the whole around 100 km long Padma reach. The FERMIP identified sub-reaches with similar river and flood plain characteristics as practical subproject areas. Each sub-reach consists of several upazilas, which facilitates the data collection. In total 14 sub-reaches were identified: two each at the Jamuna Right and Left Bank (JRB, JLB), 3 along the Padma Right and Left Bank (PRB, PLB), one at the Meghna Right Bank (MRB), and two along the Meghna Left Bank (MLB). The PPTA feasibility study covered the priority investment during the first Tranche. Subsequent tranches will be identified during each previous, ongoing tranche.

## 2 Tranche-1 Components

This RP is only for Tranche-1 Jamuna Right Bank's first Sub-Reach (JRB-1):

<b>Table ES-1: Proposed JRB-1 Interventions</b>	<b>KM</b>
a) New Jamuna Embankment (with a 2 Km Old Embankment sub-section)	12.56
b) Rehabilitated Hurashagar/Baral Embankment	10.44
<b>Subtotal</b>	<b>23</b>
c) Riverbank Protection near the Old Embankment	1.0
<b>Total</b>	<b>24</b>

In Tranche-1, there are three other proposed Riverbank Protection (RBP) interventions on the Jamuna's left bank (JLB):

<b>Table ES-2: Proposed JLB-1&amp;2 Interventions</b>	<b>KM</b>
• Chauhali RBP within the <i>Jamuna Left Bank</i> (JLB)-2 Sub-Reach	5
• Zafferganj RBP within JLB-2 Sub-Reach	2
• Harirampur RBP within <i>Padma Left Bank</i> (PLB)-1 Sub-Reach	7
<b>Total</b>	<b>14</b>

The left bank three RBPs will also be constructed in Tranche-1, but the changing morphology of Jamuna and Padma Rivers after two flood seasons before construction can start means that the configuration of the RBPs will be considerably different by the time of the FERMIP implementation. Therefore, for budget purposes, the 1 Km unit costs of the right bank RBPs will be estimated from average costs of the JREMP& JRB-RBPs. Early in implementation, new sub-project RPs will be drafted by the construction supervision consultant (CSC) for ADB's approval before construction will commence, following the MRB's Resettlement Framework (RF).

*Measures to Minimize Impacts.* All necessary efforts have been made in order to minimize Project impacts on assets and avoid disruption of livelihoods as far as possible. Extensive consultations have been conducted with the affected communities and people along the New Yamuna Embankment Row to take in their views and concerns and incorporate the same in the proposed alignment, as far as possible. Along the new Yamuna embankment, the alignment would have affected six cultural structures. In these cases, the local people were consulted and design changes made accordingly so that only two small mosques will be relocated from the Row, with the consent of the local communities. The following table summarizes the resettlement impacts due to land acquisition for the project.

**Table ES-3: Summary of Resettlement Impacts**

Issues	Embankment		Riverbank Protection	Total
	Non-Agricult.	Agricultural	Non-Agricultural	
Quantum of land acquisition requirement	13.62 ha	78.58 ha	1.8 ha	94 ha
Number of households affected	594	548	42	1,184
Number of persons (individuals) affected	4,200	4,393	360	8,953

### 3 Socioeconomic Profile of the Affected Population

In the Tranche-1 Embankment (EMB) area, 594 affected households (AHs) losing structures were found on the alignment. In the River Bank Protection (RBP) area, 42 AHs were found on the alignment. The 594 AHs in the EMB area comprise 4,200 persons. Overall, the EMB and the RBP have non-agricultural 636 AHs, comprising a population of 4,560. In addition, there are an estimated 548 agricultural plot user AHs, comprising a population of 4,393. Including both the AHs losing structures and the estimated plot user AHs, there are a total of 1,184 AHs comprising a population of 8,953 APs.

In the EMB area, 98% of the households are Muslim; and the remaining are Hindus or 'other,' while all of the HHs in the RBP area are Muslim. Almost all (99%) of the HHs in the EMB area and all (100%) of the HHs in the RBP area are mainland Bangladeshi. The remaining households (1.3%) in the EMB area are char land Bangladeshi and others. There are no indigenous people (IPs). Only 10 persons were found disabled in the EMB area. There are no disabled people in the RBP area. The gender status, impacts and issues have been specifically analyzed and documented in a Gender Analysis Report.

### 4 Impacts of the Tranche-1 Components (Embankment and Riverbank Protection)

The Tranche-1 impacts are based on the findings of: 1) a Census and 2) an Inventory of Losses (IOL) 100% survey; and 3) a Socioeconomic (SES) and 4) an Agricultural Plot Users random cluster sample 20% survey, which were used for preparing a detailed budget. For the embankment (EMB) and riverbank protection (RBP) construction, a total of 94 ha of land will be acquired, which includes 88 ha for the EMB and 1.8 ha for the RBP construction and 4.2 ha for structures. On this land, there is a total of 1,184 affected households (AHs), 1,142 on the EMB and 42 on the RBP. This includes an estimated 548 agricultural plot users on 78.58 ha of agricultural land. The AHs include a total of 4,560 affected persons (APs). An estimated 4,393 APs are agricultural plot users. Out of the 636 AHs on the embankment and riverbank protection area losing structures, 590 will lose homestead structures, while the remaining 46 will just lose commercial structures. Most of these 590 AHs own the land, they live on, just 216 AHs have no title for the land they use. 264 AHs own the land and the rest of 110 AHs lease the land from private owners. On the 1.5 Ha Old Embankment (OE), which belongs to BWDB, there are 190 AH river erosion refugees, who are technically squatters.

### 5 Consultations, Disclosure and Participation

The public consultation process in the project area began in 2012-2013, as part of the first pre-feasibility study. Public Consultation Meetings (PCMs) and Focus Group Discussions (FGD) provided the affected households opportunities to express their concerns about land acquisition, compensation, and resettlement. At the detailed design (DD) stage, an RP for the core Tranche-I subproject(s) will be prepared, updated and implemented in close consultation with the stakeholders and will involve focus group discussions (FGDs) and meetings, particularly with the affected households (AHs). Summary of draft RPs will be translated in *Bangla* and will also be made available at the upazila office and union parishad (local council). The summary of the RPs will be disclosed on the ADB's website, and the consultation will continue throughout the project implementation period. An information booklet in English and Bangla has already been designed for approval of the Gob for distribution among the APs as the primary tool for disclosure.

## **6 Grievance Redress Mechanism**

A project level GRC will be composed of: a) Representative from BWDB – Convener(Executive Engineer (Field)/Equivalent); b)Chairman concerned Union Parishad – Member; c)Representative from APs – Member; d)Sub Assistant Engineer From BWDB - Member Secretary. The GRC will be meeting all APs who have grievances informally as well as formally to ensure speedy and out of court settlement of as many disputes as possible. Irrespective of the GRC decisions, an aggrieved person will be free to access the country's legal system at any stage of the grievance redress mechanism.

## **7 Legal and Policy Framework**

The principal legal instrument governing land acquisition in Bangladesh is the Acquisition and Requisition of Immovable Property Ordinance II (1982) and subsequent amendments of the Ordinance II (1989/93/94) and other land laws and administrative manuals relevant to allusion/delusion land, *char* and *khas* land administration in Bangladesh. The 1982 Ordinance requires that compensation be paid for (i) land and assets permanently acquired (including standing crops, trees, houses); and (ii) any other damages caused by such acquisition. The act has no provisions for resettlement of the affected households/businesses or any assistance for restoration of livelihoods of the affected persons. The ADB has its own integrated safeguard policy statement (SPS) to minimize displacement and require time-bound action plans with measures to restore or improve livelihood and income of those affected by development projects. Since the 1982 Ordinance falls short of the requirements of the ADB's safeguard policies on many grounds, the project land acquisition and resettlement policy has been harmonized with ADB's SPS.

## **8 Income and Livelihood Restoration Program (ILRP)**

The FERMIP recognizes diminishing income and dislocation of livelihoods during and after relocation. As a result, in addition to providing compensation and resettlement benefits, appropriate supporting measures will be included for income and livelihood restoration of APs. APs will be given preferences for project-related employment– whenever possible. BWDB will make provision in the contract with the contractors for employment of APs (with ID cards) or their dependents/women on a priority basis, provided, they possess the required skills. The sub-reach RPs will budget an Income and Livelihood Restoration Program (ILRP) particularly targeting the poor and the vulnerable groups, including poor female-headed households. The ILRP will include human resource development and occupational skill development trainings and subsequent credit support for undertaking suitable business. The main objective of the ILRP will be to improve or, at least restore, the income and livelihood of all APs.

## **9 Institutional Arrangements for RP Implementation**

BWDB is the project owner and executing agency (EA) of the Project. A Project Management Office (PMO), headed by a Project Director (PD), will be set up within BWDB for execution of the Project. A Resettlement Unit (RU) will be established within the PMO, headed by Chief Resettlement Officer (CRO), which will be responsible for implementation of the RP – disbursement of compensation through DC and resettlement benefit through its own staff with assistance from Resettlement Implementing NGO (RP-INGO) and concerned BWDB field division. The RU responsibility will include implementation of an Income and Livelihood Restoration Program (ILRP) with the help of a national Livelihood Development NGO (LD-NGO) and a GAP during and after resettlement of APs.

## **10 Relocation, Site Development and Resettlement**

FERMIP's approach to relocation, site development and resettlement will be modeled on the JMREMP's successful experience. The PPTA has sought low-lying areas, especially sand-cast or breached, in proximity of AP population clusters along the EMB/RBP that can be bought by APs through support of FERMIP's Construction Supervision Consultant (CSC) resettlement staff, the RP-INGO, Local Government

Institution (LGI) representatives. As with JMREMP, the FERMIP will encourage self-relocation. But FERMIP will also consult with APs on potential resettlement village (RV) locations. FERMIP will also conduct field trips to JMREMP's RVs so that EMB/RBP Tranche-1 APs will have firsthand knowledge of JMREMP AP's experience of relocation. As with JMREMP, the RP-INGO will assist APs to jointly purchase their RV plots using their relocation grants (RBs). Land acquisition will be avoided as much as possible, but there will be some land acquisition for access roads (which will be as short as possible) and from excess AP plots for civil amenities, including tube wells, water-seal latrines and electrification. For self-relocation, BWDB will assist as far as feasible (depending on location) raising individual plots with sand dredging, a common technique in Bangladesh for re-claiming, low-lying flooded lands.

## 11 Land Acquisition and Resettlement Costs

The total land acquisition and resettlement budget for Tranche 1, including three RBP construction sites on the left bank of Jamuna and Padma, is Tk 1,088,990,285 or about US\$ 13.6million. The budget for the Tranche-1 JRB-1 sub-reach resettlement is Tk 743,254,067 or about US\$ 9.3million, including +/- 10 percent contingency. In JRB 1, 94 Ha for EMB and RBP and Structures will be acquired, which accounts for roughly 70 percent of the total budget. In whole Tranche 1, additional 42 Ha for three RBP construction sites on the left bank of the Jamuna and Padma River have to be acquired. These too are about 70 percent of the total budget.

**Table ES-4: Resettlement Budget**

No.	Expenditure Item	Total BDT	Total US\$	%
A.	Land Acquisition	756,363,188	9,454,540	69.46
B.	Replacement Cost	115,924,581	1,449,057	10.65
C.	Relocation Cost	12,500,000	156,250	1.15
D.	Rehabilitation Assistance for AHs	12,013,000	150,163	1.10
E.	Implementation, Service and Training	93,190,400	1,164,880	8.56
F.	Subtotal (A+B+C+D+E)	989,991,169	12,374,890	
G.	Contingency (10%)	98,999,117	1,237,489	9.09
<b>H.</b>	<b>TOTAL</b>	<b>1,088,990,285</b>	<b>13,612,379</b>	<b>100</b>

The land Acquisition and Replacement Costs will be paid according to the Land Acquisition law of 1982, and the other costs will be paid according to the Entitlement Matrix.

## 12 Resettlement Databank, Monitoring and Evaluation

Carrying out land acquisition and related resettlement under the project, will involve information and data including detailed information and data on land parcels, standing structures, trees, ownership (including all kind of interest), loss quantities etc. On the other hand, quite a number of agencies, including BWDB (PMO and SMOs) Deputy Commissioner, implementation NGOs will be involved in the implementation of the activities. Considering large quantity of data and processing need, it would be sensible to establish a computerised databank. The PPTA team has already carried out surveys and developed a database of census and losses. This database and information to be collected in future together will form LA&R Databank. The data bank will act as the key source of information for implementation, monitoring and evaluation purposes. An automated Entitled Person (EP) files, covering all the losses of individual households, will be prepared for using it as an input towards preparation of entitlement cards and payment statement. These automated files will reflect all the identified losses, all the entitlement, the entitlements paid and the amount pending. There will be a computerized resettlement Management Information System (MIS) which will enhance the institutional capacity of both BWDB and the RP-INGO in land acquisition and resettlement (LA&R) management for the project. RP implementation will be supervised and monitored by the CRO in coordination with concerned field divisions and staff of RP-INGO. The monitoring will be done both internally and externally to provide feedback to BWDB and to assess the effectiveness of the resettlement policy and implementation. The monitoring will use appropriate indicators as developed by BWDB with assistance from the construction supervision consultant (CSC). The Construction Supervision Consultant (CSC) will conduct regular monitoring of the RP implementation and submit reports to the EA (BWDB) for the EA's required annual



monitoring reports to the ADB. Finally, external monitoring will be carried out through an appropriate agency.

## ABBREVIATIONS

AC	Assistant Commissioner	JVT	Joint Verification Team
AD	Alluvial and Diluvial	LA	Land Acquisition
ADB	Asian Development Bank	LAP	Land Acquisition Plan
ADC	Additional Deputy Commissioner	LAR	Land Acquisition and Resettlement
AIFRERMIP	Assam Integrated Flood and Riverbank Erosion Risk Management Investment Project	LD	NGO Livelihood Development NGO
AP	Affected Persons	LGI	Local Government Institution
BRE	Brahmaputra Right Embankment	M&E	Monitoring and Evaluation
BWDB	Bangladesh Water Development Board	MFI	Micro-Finance Institution
CbFRM	Community-based Flood Risk Management	MHH	Male Headed Household
CCL	Cash Compensation under Law	MWR	Ministry of Water Resources
CEGIS	Centre for Environmental and Geographic Information Services	MIS	Management Information System
CEMP	Community Environmental Management Plan	FERMIP	Main River Flood and Bank Erosion Risk Management Program, TA 8054-BAN
LD-NGO	Livelihood Development NGO	NGO	Non-Government Organization
CPR	Common Property Resources	PCR	Physical Cultural Resources
CSC	Construction Supervision Consultant	PPTA	Project Preparatory Technical Assistance
DC	Deputy Commissioner	PRA	Participatory Rapid Appraisal
DD	Detailed Design (Team)	PVAT	Property Valuation Advisory Committee
DD	Deputy Director – RU	PWD	Public Works Department
DPP -	Development Project Proposal	RAC	Resettlement Advisory Committee
EA	Executing Agency	ROW	Right-of-Way
EP	Entitled Persons	RP	Resettlement Plan
EARP	Environmental Assessment And Review Procedure.	RBP	Riverbank Protection
EMP	Environmental Management Plan	RC	Replacement Cost
FGD	Focus Group Discussions	SDF	Social development Fund
FHH	Female Headed Household	TOR	Terms of Reference
FRERM	Flood And Riverbank Erosion Risk Management	UP	Union Parishad
FRERMIP	Flood And Riverbank Erosion Risk Management Investment Program	WB	World Bank
FS	Feasibility Study		
GOB	Government of Bangladesh		
GRC	Grievances Redress Committee		
HRD	Human Resources Development		
ID	Identity Card		
ILRP	Income And Livelihood Restoration Program		
INGO	Implementing NGO		
IOL	Inventory of Losses		
JMREMP	Jamuna-Meghna River Erosion Mitigation Project		

## GLOSSARY

The various terms used in this RP are briefly defined below for clarity and consistency:

<p><b>Affected Persons (AP):</b> As per the FERMIP's involuntary resettlement policy, the definition of APs is: "Persons affected directly or indirectly by project-induced changes in use of land, water, or other natural resources are called APs. In other words, a person who as a consequence of the changes sustains (a) damages by reason of severing land, or (b) loss of immovable property in any manner, or (c) experience loss of income and livelihood. Such impacts may be temporary or permanent in nature and most often occurs through land expropriation using eminent domain or direct purchases for development projects." (The FERMIP policy is not functionally different from ADB's 2009 SPS definition 'displaced person').</p> <p><b>Agricultural laborer:</b> A person who earns his/her livelihood mainly from manual labor engaged in agriculture practices. The non-agricultural laborer includes artisans and other occupational groups such as masons, potters, cobblers, barbers, etc.</p> <p><b>Census Survey:</b> A survey covering 100% households being affected by the project, irrespective of their ownership into the land.</p> <p><b>Community Participation and Consultation:</b> The active process of sharing information seeking inputs from community about the project, seeking community-wide inputs, and integrating those in the project design as well planning mitigation measures.</p>	<p><b>Gender Equity:</b> Equal recognition of both genders in the provision of entitlements, treatment and other measures under the Resettlement Plan.</p> <p><b>Indirectly</b> affected people are those likely to lose subsistence or income due to project intervention without loss of any physical assets. A clear definition of indirectly affected people must be based on a careful review and assessment of indirect impacts of the project.</p> <p><b>Inventory of losses Verification Committee (IVC):</b> In an erosion-prone area and due to piecemeal acquisition, Inventory of Losses (IOL) prepared for a section of project may change as people move with the erosion and acquisition. A committee headed by Executive Engineer (Resettlement), with Representative of respective DC and Resettlement Specialist of the Management Consultants as members to verify the IOL established through census wherever necessary.</p>
<p><b>Compensation:</b> Payment in cash or kind (for example land-for-land) to the APs as per LA Act.</p> <p><b>Cut-off Dates:</b> Date of notification under Section 3 of 1982 Ordinance is the cut-off date for title owners. The end date of the Census will be considered cut-off date for all others, including non-title holders for resettlement benefits.</p> <p><b>Displaced Persons:</b> In the context of involuntary resettlement, displaced persons are those who are physically displaced (relocation, loss of residential land, or loss of shelter) and/or economically displaced (loss of land, assets, access to assets, income sources, or means of livelihoods) as a result of (i) involuntary acquisition of land, or (ii) involuntary restrictions on land use or on access to legally designated parks and protected areas. (ADB's SPS 2009)</p>	<p><b>Person(s) having usufruct rights:</b> The right to use land belonging to others – for example, lease from government department or agency or individuals.</p> <p><b>Project-Affected Area:</b> An area under the project, declared by the Government, where land is being acquired under Acquisition and Requisition of Immovable Property Ordinance – II of 1982 or any other Act in force or an area not acquired, but affected by the project and its related activities.</p> <p><b>Poor Women-headed household:</b> Poor households where a woman decides on the access to and the use of the resources of the family. In resettlement context, women-headed households and/or widows also suffer from lack of labor for relocation purposes.</p>
<p><b>Entitled Person:</b> EP is an administrative term for designating benefits for APs. There are two types of EP: Direct EPs, who are EPs by virtue of legally recognized entitlements; and Indirect EPs, who are EPs</p>	<p><b>Public Disclosure:</b> Process of disclosing and sharing project impacts with affected people and disseminating amongst them information on their entitlements, compensation, R&amp;R measures and project timeline etc.</p>

<p>by virtue of socially recognized entitlements, as per ADB Policy and legally agreed between the ADB and GOB through the Loan Agreement. The Direct EPs are the Titleholders recognized by the DC and confirmed through payment of Cash Compensation under Law (CCL). The Direct EPs are identified as per the Final Award information prepared by the DC upon payment of CCL. The list of the Direct EPs will be updated over time, with payment of the CCL. The Indirect EPs are those without legal title to ROW land and/or structures but who were living and/or earning their livelihood within the ROW, and are entitled to Resettlement Benefits under the RP provisions. The INGO is responsible for all groundwork and verification for identification of EPs.</p> <p><b>Entitlements:</b> Range of measures comprising of compensation resettlement benefits, including shifting allowance, subsistence, and relocation which an AP is entitled to, depending on the nature of losses, to restore and/or improve the living standards.</p> <p><b>Eminent Domain:</b> Regulatory authority of the government to obtain land for public purpose use and/or private sector development projects under the 1982 Ordinance or other laws of the land.</p> <p><b>Head of Household:</b> One who makes major decisions within the family structure and generally lead the family as the principal provider.</p> <p><b>Household:</b> A household unit includes family members who share food from the same kitchen. In the project area, it consists of parents with children living together as an economic and production unit.</p> <p><b>Host population:</b> Community residing in or near the area to which affected people are to be relocated. Host communities should also be project beneficiaries for better host-resettlers integration.</p>	<p><b>Rehabilitation:</b> Re-establishing incomes, livelihoods, living and social systems.</p> <p><b>Relocation:</b> Rebuilding housing, assets – including productive land, and public infrastructure, in a new location.</p> <p><b>Replacement Cost:</b> The costs of replacing lost assets (e.g., land, houses/structures, trees and crops) and income, including cost of transaction. (Historically, in Bangladesh involuntary resettlement policy usage, also referred as Replacement Value, or RV)</p> <p><b>Resettlement and Rehabilitation (R&amp;R):</b> Resettlement refers to rebuilding housing, assets, including productive land and public infrastructure in another location while rehabilitation means restoration of income, livelihoods, and re-establishment of sociocultural system.</p> <p><b>Resettlement Plan (RP):</b> A time bound action plan with budget setting out resettlement impact strategy, objectives, entitlement, actions, implementation responsibilities, monitoring and evaluation.</p> <p><b>Right-of-Way:</b> Demarcated land proposed for infrastructure development</p> <p><b>Social Preparation:</b> The process of consultation with affected people, undertaken before key resettlement decisions are made, to build their capacity to deal with resettlement.</p> <p><b>Uthuli (also called Nodibashi):</b> People displaced by flood/erosion, who live on land provided by neighbor or relative free of cost.</p> <p><b>Vulnerable Person:</b> The vulnerable group/persons may include (i) persons below nationally defined poverty line; (ii) indigenous people or adibasis; (iii) poor women-headed households; (iv) landless and marginal farmers; (v) people with disability (vi) elderly; (vii) people without legal title to land; (viii) any other groups or persons found to be disproportionately affected by project impacts.</p>
---	--

## Table of Contents

EXECUTIVE SUMMARY .....	i
ABBREVIATIONS .....	vi
1 Introduction .....	1
1.1 The Program Background .....	1
1.2 Phased Investment Program .....	3
1.3 Program Rationale and Objectives .....	5
2 Embankment (EMB) and Riverbank Protection (RBP) .....	8
2.1 Background of the JRB-1 Sub-Reach Proposed and Existing Components .....	8
2.2 General Description of JRB-1 Sub-Reach Proposed EMB and RBP Components .....	12
2.2.1 The 2 Km Old Embankment (OE) .....	12
2.2.2 The New FERMI Embankment Design .....	13
2.2.3 The Riverbank Protection (RBP) Design .....	15
2.2.4 Special Land Acquisition Issues with Riverbank Protection (RBP) .....	22
2.2.5 Constructing Riverbank Protection .....	23
2.2.6 Measures to Minimize Embankment Impact .....	27
2.2.7 Proposed 1 Km New Jamuna Riverbank Protection .....	32
3 Socio-economic Profile of the Affected Population .....	33
3.1 Tranche-1 Area .....	33
3.2 General Profile of the Tranche-1 Districts .....	33
3.2.1 Demographic Aspects .....	33
3.2.2 Ownership of Agricultural Land .....	33
3.2.3 Land Use Pattern .....	34
3.2.4 Access to Socio-economic Facilities .....	35
3.3 Socioeconomic Profile of Affected Population .....	37
3.3.1 Demographic Information .....	37
3.3.2 Level of Education .....	38
3.3.3 Occupational Profile .....	39
3.3.4 Level of Income of Affected Population .....	39
3.3.5 Poverty Status .....	41
3.3.6 Gender Status .....	41
4 Impacts of the Tranche-1 Components (Embankment and RBP) in JRB-1 .....	42
4.1 Introduction .....	42
4.2 Embankment and Riverbank Protection Impacts .....	44
4.3 The Embankment Impacts .....	44
4.4 The Riverbank Protection Impacts .....	45
4.5 Scope of Embankment Land Acquisition .....	45
4.6 Scope of RBP Land Acquisition .....	45
4.6.1 Impact on Embankment and RBP Agricultural Land .....	46
4.7 Embankment Induced Displacement .....	48
4.7.1 Gender Disaggregated data of the Displaced Households .....	48
4.7.2 Type of Affected Structures .....	48
4.7.3 Land Tenancy and Use Right of Structures .....	49
4.7.4 Construction Type of Affected Structures, by Component .....	50
4.8 Affected Trees .....	50
4.9 Impact on Wage Earners .....	51
4.10 Vulnerability Status of Affected Households .....	51
5 Consultation, Disclosure and Participation .....	53
5.1 Consultation Process .....	53
5.2 Project Stakeholders .....	54
5.2.1 Definition .....	54
5.2.2 Stakeholders' Attitudes towards the Project .....	54

5.2.3	Consultation Process.....	55
5.2.4	Public Consultation Meetings (PCMs).....	55
5.2.5	Focus Group Discussions (FGDs) .....	59
5.2.6	Public Disclosure of RP .....	61
5.2.7	Strategy for Community Consultation and Participation during Implementation .....	62
6	Grievance Redress Mechanism.....	62
7	Legal and Policy Framework .....	64
7.1	GOB Laws on Land Acquisition.....	64
7.1.1	Inadequacies of 1982 Ordinance .....	64
7.1.2	Harmonization with ADB's Policies .....	64
7.2	Policy Principles and Guidelines.....	65
7.2.1	Planning Steps and Procedures.....	65
7.2.2	Eligibility and Entitlements .....	65
7.2.3	Unanticipated Impacts on Charlands .....	67
7.2.4	Valuation of Assets.....	67
8	Definitions of Terms.....	73
9	Income and Livelihood Restoration Program(ILRP) .....	75
9.1	Impacts on Income.....	75
9.2	Approach towards Income and Livelihood Restoration .....	76
9.3	Short-Term Income and Livelihood Restoration Measures .....	79
9.3.1	Cash Assistance to Support Lost Income .....	80
9.3.2	Employment in the Project construction work, if possible Assistance to Re-Establish Business/Enterprises.....	80
9.3.3	Special Assistance for Vulnerable Groups.....	80
9.3.4	Employment in Construction Work.....	80
9.3.5	EMB Plantation and Social Forestry.....	81
9.3.6	Long-Term Income & Livelihood Restoration Plan .....	81
10	Institutional Arrangements for Rp Implementation .....	83
10.1	Introduction .....	83
10.2	Institutional Framework for RP.....	83
10.2.1	Roles and Responsibilities.....	83
10.2.2	Capacity Building for Resettlement Management.....	89
10.2.3	Implementation and Monitoring Database .....	90
10.2.4	RP Implementation Schedule.....	90
11	Relocation, Site Development and Resettlement.....	94
11.1	Displacement and Relocation .....	94
11.2	FERMIP's Approach to Relocation, Site Development and Resettlement.....	94
11.3	Potential FERMIP Resettlement Village Sites.....	95
11.3.1	Self-Managed Resettlement by Affected Households .....	97
11.3.2	Small Group Resettlement .....	97
11.4	Gender Planning and Other Vulnerable Groups .....	97
11.5	Physical Cultural Resources .....	98
12	Land Acquisition and Resettlement Costs.....	99
12.1	Introduction .....	99
12.2	Budget.....	99
12.3	Unit Costs of Land and Assets.....	102
12.3.1	Replacement Cost (RC) of Land.....	102
12.3.2	Replacement Cost (RC) of Structures.....	103
12.3.3	Market Value of Trees.....	104
12.3.4	Market Value of Crops .....	104
12.3.5	Provisions of Resettlement and Rehabilitation Assistance.....	105
12.3.6	Approval of the Resettlement Budget .....	105
13	Resettlement Databank, Monitoring And Evaluation .....	106
13.1	Introduction .....	106
13.2	Objectives of M&E .....	106

13.3	Stages of M&E.....	106
13.3.1	Preparatory Stage .....	107
13.3.2	Relocation Stage .....	107
13.3.3	Rehabilitation Stage .....	107
13.3.4	M&E Indicators .....	108
13.4	Monitoring Levels and Hierarchy.....	108
13.4.1	Internal Monitoring.....	109
13.4.2	External Monitoring .....	109
13.5	Methodology and Approach .....	109
13.6	Institutional Arrangements for M&E .....	110
13.6.1	Office of the Project Director .....	110
13.6.2	External Monitoring Agency .....	110
13.7	Reporting Requirements.....	111
1.	Background.....	Error! Bookmark not defined.
2.	Definitions of Some of the Resettlement Terms.....	Error! Bookmark not defined.
3.	Cut Off Dates .....	Error! Bookmark not defined.
4.	The Resettlement Entitlement Matrix.....	Error! Bookmark not defined.
5.	Procedures for Receiving Resettlement and Other Grants.....	Error! Bookmark not defined.
	Technical Annexure for resettlement survey .....	Error! Bookmark not defined.
	Questionnaire .....	Error! Bookmark not defined.
	Modern survey.....	Error! Bookmark not defined.
	Digitalizing the questionnaire .....	Error! Bookmark not defined.
	Experiences and Problems.....	Error! Bookmark not defined.
	Maps and ROW .....	Error! Bookmark not defined.
	Rationale for ILRP .....	Error! Bookmark not defined.
	Selection of Products or Sub-Sectors.....	Error! Bookmark not defined.
	Features of ILRP under FERMI.....	Error! Bookmark not defined.
	Proposed ILRP Components.....	Error! Bookmark not defined.
	Livestock (Dairy, Fattening and Sheep Rearing) .....	Error! Bookmark not defined.
	Shajadpur Upazilla, Shirajganj District .....	Error! Bookmark not defined.
	Fisheries .....	Error! Bookmark not defined.
	Shajadpur Upazilla, Shirajganj District .....	Error! Bookmark not defined.
	General.....	Error! Bookmark not defined.
	<i>The Old Embankment (OE) and RPB</i> .....	Error! Bookmark not defined.

## Tables

Table 1-1:	Sub-reaches, Rivers, Districts and Upazilas.....	3
Table 2-1:	Number of Houses Counted on Tranche-1 Proposed Left Bank RBP Interventions, Image Date 1/12/2013 .....	16
Table 2-2:	Issues of Focus Group Discussions (FGDs) for Minimizing Physical Cultural Resource (PCR) Displacement. ....	30
Table 3-1:	Sub-Reaches and the Administrative Locations of the Tranche-1 Area .....	33
Table 3-2:	Population Distribution in Tranche-1 Area .....	33
Table 3-3:	Ownership Pattern of Agricultural Land in Tranche-1 Districts .....	34
Table 3-4:	Land Use in Tranche-1 Districts .....	35
Table 3-5:	Medical Facilities in Tranche-1 Districts.....	36
Table 3-6:	Literacy Rate in the Tranche-1 Area.....	36
Table 3-7:	Educational Infrastructures in Project Districts .....	37
Table 3-8:	Affected Populations by Age and Sex (%) .....	38
Table 3-9:	Level of Education of Affected Population (7 years and above).....	39
Table 3-10:	Primary Occupation of Affected Household Heads .....	39
Table 3-11:	Level of income of HH head per year for EMB.....	40
Table 3-12:	Level of income of HH head per year for RBP.....	40
Table 3-13:	Total HHIncome per year by EMB and RBP Area .....	40

Table 3-14: Level of Expenditure among Affected Households.....	41
Table 3-15: Self-assessed Level of Poverty among Affected Households .....	41
Table 7-1: Type of Losses of the Embankment AHs.....	44
Table 7-2: Acquired Commercial Structures.....	44
Table 7-3: Details of Affected PCRs on the New Jamuna Embankment .....	45
Table 7-4: Type of Losses of the RBP AHs.....	45
Table 7-5: Affected Commercial Structures.....	45
Table 7-6: Distribution of Embankment Affected Land in Ha.....	46
Table 7-7: Distribution of RBP Affected Land in Ha.....	46
Table 7-8: Usage of Affected Land on Embankment and RBP by Ha(including already acquired land) ....	46
Table 7-9: Percentage of Agricultural Land Lost to Embankment .....	47
Table 7-10: Distribution of Agricultural Land by Ownership .....	47
Table 7-11: Gender of AH Heads on Embankments .....	47
Table 7-12: Estimating Number of Plot User AHs, based on 20 Percent Sample .....	47
Table 7-13: Percentage of Homestead Land Lost to EMB and RBP .....	48
Table 7-14: Component wise Gender Profile of the Affected Population .....	48
Table 7-15: Component Wise Impact on Structures.....	49
Table 7-16: Distribution of Land of the Embankment and RBP Affected Homestead Structures by Ownership.....	49
Table 7-17: Component-Wise Distribution Structures by Construction Type .....	50
Table 7-18: Number of Trees Affected by Component.....	50
Table 7-19: Component-wise Project Impact on Wage Earners.....	51
Table 7-20: Vulnerable Affected Households by Component .....	51
Table 8-1: Summary of Public Consultation Meetings (PCMs) held under ADB PPTA Study(Tranch-1 Area) .....	55
Table 8-2: Summary of Focus Group Discussions (FGDs) held under ADB PPTA Study (Tranch-1 Area)...	59
Table 10-1: Project Eligibility and Entitlement Matrix.....	67
Table 12-1: Types of Income impacts on Affected Households.....	75
Table 12-2: Estimated Main Occupation of APs, by Gender and Percentage (APs2,694) .....	75
Figure 13-1: RP Provisional Implementation Schedule, 2014-2017 (Shaded Columns = Rainy Season) ...	93
Table 14-1: Potential Resettlement Village Sites – For Illustration Only .....	96
Table 15-1: Summary Budget for FERMIP Resettlement Plan .....	100
Table 15-2: Detailed Budget for FERMIP Resettlement Plan.....	101
Table 15-3: The prices (Tk) for the Different Land Types in Different Mouzas in JRB-1 Sub-Reach.....	103
Table 15-4: Current Market Price of Affected Structures for 2013 .....	104
Table 15-5: Number and Market Value of Trees by size.....	104
Table 15-6: Current Market Price of Standing Crops.....	105
Table 16-1: Reporting Cycle/Frequency.....	111
Table 2: Engineers conducting iPad Survey .....	<b>Error! Bookmark not defined.</b>

## Figures

Figure 1-1: Sub-Reach Division of Project Area .....	2
Figure 1-2: Summary Initial Investment Program.....	6
Figure 1-3: Summary Initial Tranche-1 Investment Program .....	7
Figure 2-1: Brahmaputra Right Embankment (BRE) & JRB-1 Tranche-1 Project Reach.....	8
Figure 2-2: Erosion Breached Hurashagar Flood Control, Drainage, and Irrigation (FCD) Project .....	9
Figure 2-3: JRB-1 Sub-Reach Area - Proposed and Existing Components.....	10
Figure 2-4: Schematic Map of EMB/RBP Intervention.....	11
Figure 2-5: 2 Km Old Embankment Existing Design Configuration.....	12
Figure 2-6: 2 Km Old Embankment Future Design Configuration.....	13
Figure 2-7: 2 Km Old Embankment- Showing Borrow Pit and Proposed 1 Km RBP .....	13
Figure 2-8: Views of the 2 Km Old Embankment's Borrow Pit .....	13
Figure 2-9: FERMIP 45 m RoW Embankment Cross Section .....	14



Figure 2-10: FERMIP50 m RoW Embankment Cross Section .....	14
Figure 2-11: EMB Road link to ParjonaBridge, Shahjadpur, and National Road 5 .....	15
Figure 2-12: Proposed Tranche-1 Riverbank Protection Interventions .....	16
Figure 2-13: through 2-20 are typical photos of the Tranche-1 RBP areas. ....	17
Figure 2-14: Typical Photos of the 5 Km New Jamuna RBP .....	17
Figure 2-15: Typical Photos of the 5 Km New Jamuna RBP .....	18
Figure 2-16: Typical Photos of the 5 Km Chauhali RBP .....	18
Figure 2-17: Typical Photos of the 5 Km Chauhali RBP (One Photo Below) .....	19
Figure 2-18a: Typical Photos of the 2 Km Zafferganj RBP (One Photo Above) .....	20
Figure 2-19b: Typical Photos of the 2 Km Zafferganj RBP .....	21
Figure 2-20a: Typical Photos of the 7 Km Harirampur RBP .....	22
Figure 2-21b: Typical Photos of the 7 Km Harirampur RBP .....	22
Figure 2-22: Adaptive Approach to Fast Eroding Conditions .....	24
Figure 2-23: Using Geobags, Geo-Textile Cloth Bags Filled With Local Sediment, Sand, or Concrete .....	24
Figure 2-24: Illustration of Primary Protection through Systematically Dumped Geobags .....	25
Figure 2-25: Photograph of Primary Protection through Systematically Dumped Geobags from Barge ..	25
Figure 2-26: Photograph of Pulling Geobag Dumping Barge to a new Location .....	25
Figure 2-27: Photograph of an Old Earthen Embankment after HHs were Resettled and the Final (Underwater) Protection was completed .....	26
Figure 2-28: Photograph an Embankment Newly Re-Constructed with Cement Blocks .....	26
Figure 2-29: Photograph the old Embankment Preparing for Permanent Protection with Grout Filled Mattress .....	27
Figure 2-30: Photograph of Re-Constructed Embankment Finished Permanent Protection with Grout Filled Mattress .....	27
Figure 2-31: Minimizing Land Acquisition on the 2 Km Old Embankment (OE) .....	29
Figure 2-32: Proposed 1 Km New Jamuna Riverbank Protection (RBP) .....	32
Figure 4-1: Proposed Tranche-1 Riverbank Protection Interventions .....	43
Figure 5-1: Rickshaw Speaker, JEMPEMP RV-1, May 11, 2013 .....	62
Table 7-1 Cut off dates for different cluster: .....	66
Figure 9-1: Potential ILRP Packages .....	79
Figure 11-1: Example of River Dredging, at JMREMP RV-1, May 11, 2013 .....	95
Figure 11-2: Google Earth Image of FERMIP Area, Late Rainy Season, Oct 11, 2011 – For Illustration Only .....	96
Figure 11-3: 2 Km Old Embankment Future Design Configuration .....	97
Figure 0-1: Former Layout of the Questionnaire .....	<b>Error! Bookmark not defined.</b>
Figure 0-2: Screenshot of the questionnaire .....	<b>Error! Bookmark not defined.</b>
Figure 0-3: Signature fields in questionnaire .....	<b>Error! Bookmark not defined.</b>
Figure 0-4: Example for a Pop-up Box .....	<b>Error! Bookmark not defined.</b>

## **List of Annexures**

ANNEXURE I:	Harmonization with ADB's Safeguard Policy
ANNEXURE II:	Gaps and Gap-Filling Measures to Comply with ADB's Safeguard Policies
ANNEXURE III:	Draft Terms of Reference - Resettlement Plan Implementation–NGO (RP-INGO)
ANNEXURE IV:	Draft Terms of Reference (TOR) For Livelihood Development NGO (LD-NGO) Planning and Implementation of Income and Livelihood Restoration Program (ILRP)
ANNEXURE V:	Draft Terms of Reference for External Monitoring Agency (EMA)
ANNEXURE VI:	Comprehensive Detail RP Land Acquisition and Resettlement Budget for Tranche-1 JRB-Sub-reach RP
ANNEXURE VII:	Draft Information Brochure RP (English & Bengali Versions)
ANNEXURE VIII:	Photos of the JRP Tranche I Intervention Project Area, from Field Visit February 2-3, 2013
ANNEXURE IX:	Technical Note for Resettlement Survey Methodology
ANNEXURE X:	Focus Group Discussion (FGD) for Resettlement Plan Preparation
ANNEXURE XI:	Excerpts from the PPTA's Income and Livelihood Restoration Program (ILRP) [Value Chain Development Approach] Report, April 2013
ANNEXURE XII:	Social Background of JRB-1 Sub-Reach Proposed EMB and RBP Components
ANNEXURE XIII:	Indicative Local Livelihood Resources Enhanced by EMB/RBP Investment for AP Livelihood
ANNEXURE XIV:	The Jamuna-Meghna River Erosion Mitigation Project (JMREMP) Approach To Relocation, Site Development And Resettlement
ANNEXURE XV:	Questionnaires adapted for iPad: 1) General Census; 2) Socio-economic (SES); 3) Inventory of Losses (IOL); and 4) Sample Agricultural Plot Users
ANNEXURE XVI:	RB-1 TRANCHE-1 March-May 2013 Census HH List

# 1 Introduction

## 1.1 The Program Background

1. The Asian Development Bank supports the feasibility assessment of a potential future flood and riverbank erosion risk management program covering parts of the main rivers of Bangladesh named Main River Flood and Bank Erosion Risk Management Program (FERMIP). The main focus is to reduce the riverbank erosion and flood risks to the adjacent flood plains while maximizing economic activities in a sustainable and environmentally acceptable manner. Existing flood embankments dominantly fail from riverbank erosion, and as such the stabilization of the river pattern is a cornerstone of reducing the flood risk. The FERMIP builds on and extends the activities of the Jamuna-Meghna River Erosion Mitigation Project (JMREMP) (ADB, 2002), implemented in different phases from January 2003 until June 2011. In addition, a similar project, the Assam Integrated Flood and Riverbank Erosion Risk Management Investment Project (AIFRERMIP) (ADB, 2010) provides important insight into a number of relevant project elements and processes.

The Figure 1-1 shows the sub-reach Divisions of the Project Area.

2. The Project will cover the main rivers from Bhangabandhu (Jamuna) Bridge<sup>1</sup> and the proposed Ganges Barrage to Chandpur, as such covering around 60 km of the Jamuna, around 20 km of the Ganges, and the whole around 100 km long Padma reach. Two main confluences are included: the confluence of Ganges and Jamuna and the confluence of Padma and Upper Meghna. Importantly, for flood benefits and, of course, targeting the overarching goal of poverty reduction, the flood plains on both sides of the rivers play a fundamental role as home of a largely poor population depending on agriculture and fisheries. As a consequence we identified sub-reaches with similar river and flood plain characteristics as practical subproject areas. Each sub-reach consists of several upazilas, which facilitates the data collection. In total 13 sub-reaches were identified for pre-feasibility assessment: two each at the Jamuna Right and Left Bank (JRB, JLB), 3 along the Padma Right and Left Bank (PRB, PLB), one at the Meghna Right Bank (MRB), and two along the Meghna Left Bank (MLB) (Figure 1-1)

3. The feasibility study covered the priority investment during the first Tranche. In Bangladesh the common MFF approach means that only the first tranche investment is identified during the PPTA. Subsequent tranches will be identified during each previous, ongoing tranche. The implementing agency, the Bangladesh Water Development Board (BWDB) (i) has more than 10 years of experience with an adaptive or flexible flood and riverbank erosion risk management (FRERM) approach and has demonstrated successful implementation from three ADB supported projects (JMREMP, South-West Area Integrated Water Resources Planning and Management Project, Secondary Towns Integrated Flood Protection Project II), (ii) has approved operation in line with the 'Guidelines for Riverbank Protection', 2010 founded on standardized design and implementation procedures, and (iii) is currently in the process of creating the post of a Chief Engineer River Management as focus point for river stabilization activities and in line with the National Water Management Plan.

---

<sup>1</sup> Presently the Jamuna Multipurpose Bridge (JMB) is known as Bhangabandhu Bridge. For an easier understanding of the location, we maintain the abbreviated form of Jamuna Bridge throughout this report.

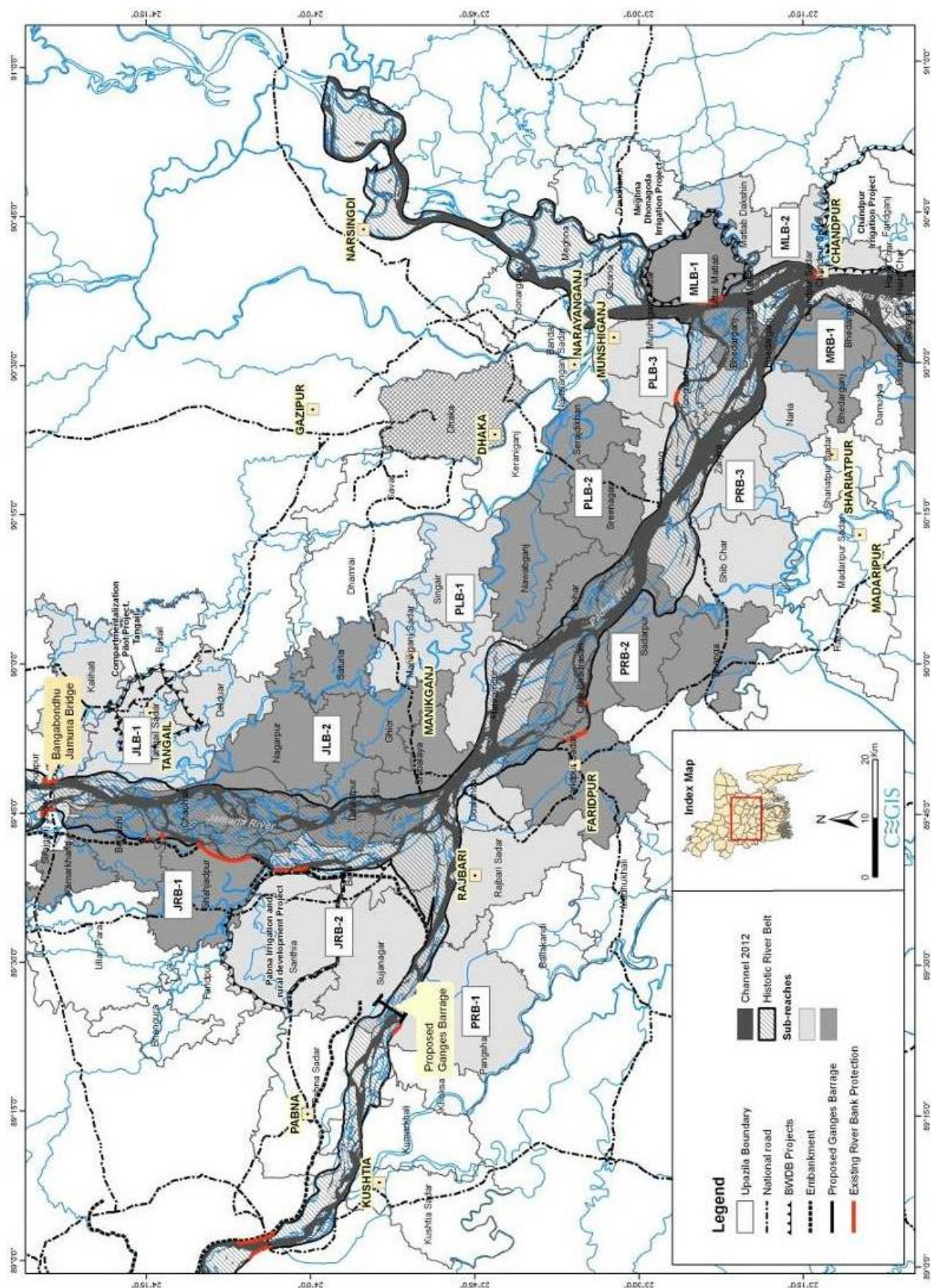


Figure 1-1: Sub-Reach Division of Project Area

**Table 1-1: Sub-reaches, Rivers, Districts and Upazilas**

River	Subreaches	District	Upazila
Jamuna	JRB-1	I. Sirajganj	1. Belkuchi
		Sirajganj	2. Kamarkhanda
		Sirajganj	3. Shahjampur
	JRB-2	II. Pabna	4. Bera
		Pabna	5. Santhia
		Pabna	6. Sujanagar
	JLB-1	III. Tangail	7. Delduar
		Tangail	8. Kalihati
		Tangail	9. Tangail Sadar
	JLB-2	IV. Manikganj	10. Daulatpur
		Manikganj	11. Ghior
		Manikganj	12. Saturia
		Manikganj	13. Shibabaya
		Sirajganj	14. Chauhali
		Tangail	15. Nagarpur
Padma	PLB-1	Manikganj	16. Harirampur
		Manikganj	17. Manikganj Sadar
		Manikganj	18. Singair
	PLB-2	V. Dhaka	19. Dohar
		Dhaka	20. Nawabganj
		VI. Munshiganj	21. Serajdikhan
		Munshiganj	22. Sreenagar
	PLB-3	Munshiganj	23. Lohajang
		Munshiganj	24. Munshiganj Sadar
		Munshiganj	25. Tongibari
	PRB-1	VII. Rajbari	26. Goalanda
		Rajbari	27. Pangsha
		Rajbari	28. Rajbari Sadar
	PRB-2	VIII. Faridpur	29. Bhangra
		Faridpur	30. Char Bhadrasan
		Faridpur	31. Faridpur Sadar
		Faridpur	32. Sadarpur
	PRB-3	IX. Madaripur	33. Shib Char
		X. Shariatpur	34. Naria
		Shariatpur	35. Zanjira
Meghna	MLB-1	XI. Chandpur	36. Uttar Matlab
	MLB-2	Chandpur	37. Chandpur Sadar
		Chandpur	38. Matlab Dakshin
	MRB-1	Shariatpur	39. Bhedarganj
		Shariatpur	40. Gosairhat

## 1.2 Phased Investment Program

4. After selecting three priority investment sites from the 13 sub-reaches, an investment plan was prepared. This plan considers a phased approach in three tranches of around four years each, allowing for some overlap of subsequent tranches. The first guiding principle is to build riverbank protection along critically eroding areas, in order to stabilize the river course and to provide more stable floodplain conditions for follow-on developments. The second guiding principle is to start with identified priority sub-reaches in Tranche-1, and then move to lesser priority areas in accordance with a tentative program framework established during the feasibility study. Apart from focusing on riverbank protection in support of stable floodplains, the program can contribute to the reclamation of some of the lost floodplain land, especially where there are attached chars which were part of the historic floodplain some 30 years ago, before the river system started widening dramatically.

5. Consequently, the first and second tranche investments at the three priority sub-reaches (shown in red and orange color in Figure 1-2:) are:
6. Priority riverbank and embankment Work (Tranche-1 – red color):
7. Riverbank Protection alongside the Jamuna Left Bank downstream of the new Dhaleswari offtake at Chouhali and Zafferganj area, where active erosion threatens the existing floodplains. The protection at Chouhali is planned to help guiding the eastern Jamuna channel towards the interior of the braided belt and as such stabilizing an existing large attached char. This char is several kilometers wide and reclamation would somewhat compensate for past erosion losses. The downstream protection at Zafferganj would form part of a more stabilized channel pattern at the confluence.
8. Embankment construction also alongside the Jamuna Right Bank and Hurashagar/Baral river, from Kaijuri to Baghabari. The area between Enayetpur and Baghabari alongside the Jamuna right bank was protected by the Brahmaputra Right Embankment (BRE) for about 30 years. This embankment was eroded as a consequence of Bangabandhu (Jamuna) Bridge construction in the mid-1990s. After BWDB provided 10 km of riverbank protection under the ADB supported JMREMP, the BRE can now be reconstructed. In this area a flood control project was situated and the reconstructed embankment would provide the backbone for increased agricultural outputs while again protecting valuable private and public infrastructure from flooding.
9. Riverbank Protection alongside the Padma Left Bank between Paturia and Harirampur , where a formerly large meander that periodically erodes has silted up and riverbank protection along the more favorable present river course would save around 30 km<sup>2</sup> (3,000 ha) of valuable floodplain from future erosion.
10. Riverbank protection from Kaijuri to the Hurashagar River at Benotia. This short stretch will close the gap between the existing 17 km long protection built upstream and downstream under JMREMP.
11. Follow-up riverbank and embankment works (Tranche 2 and subject to further investigations and background studies as well as detailed designs during Tranche-1 – orange color in Figure 1-2):
12. Riverbank Protection alongside the Jamuna Right Bank from around Enayetpur to Kaijuri. The offtake of the western channel in this area is currently declining due to an unfavorable offtake angle. Building a guiding revetment under a smooth alignment means attracting more flow to the western channel and keeping this important navigation route open.
13. Embankment construction alongside the Jamuna Left Bank from Dhaleswari to Paturia. The flood plain along the left bank of the Brahmaputra/Jamuna was never provided with a long linear embankment. An embankment, similar to the BRE, has the potential to reduce flood levels in low lying areas and as a consequence reduce future flood damages and trigger more development in the “backyard” of Dhaka.
14. Embankment construction alongside the Padma Left Bank from Paturia to Dohar, in continuation of above embankment works.
15. Embankment construction alongside the Jamuna Right Bank from Bangabandhu (Jamuna) Bridge to Enayetpur. Here the attached char formed after the bridge construction could be embanked providing a stable environment for intensified agriculture but also industrial development in the vicinity of a planned power plant. Here around 70km<sup>2</sup> of lost floodplain land would be reclaimed.
16. In addition to the work at priority sites, further studies under Tranche-1 will prepare more investment for other sub-reaches under Tranche 2. The same study procedure can be followed under Tranche 2 for the extension of sub-reaches during Tranche 3 investment. Natural river developments in some areas are expected to support investments in future, due to a current development towards generally more favorable alignments. Potential works beyond the three priority sub-reaches are:
17. Potential Tranche-2 investment sites (shown in orange in Figure 1-2).



18. The protection of Faridpur town from erosion depends on further developments of the presently straightened channel that threatened Faridpur town in 2005. Here substantial land reclamation (estimated at 70 km<sup>2</sup> or 7,000 ha) could be realized by stabilizing the recently developed straightened alignment.
19. Chandpur town protection is the cornerstone for the Padma River to turn south. The protection has been many times seriously threatened with water depth surpassing 70 m. Presently the depth is around 50 m and as such considered “safe”. However, the protective works require upgrading to be fit for the future and avoid dramatic changes in the course of the Lower Meghna. Related to this, the opposite bank is highly unstable and requires stabilization in the context of the overall confluence but also considering the influence of Padma Bridge on the future planform.
20. Potential Tranche-3 investment sites (shown as blue circles) in Figure 1-1.
21. The New Dhaleswari offtake including upstream embankment and other offtakes. This work has an all-year-round positive effect by restoring the dry season flow, while reducing the flood risk as it potentially controls the inflow to welcome normal flood levels.
22. The area from Mawa to the Upper Meghna along the Padma Left Bank, where the future Padma plan form, guided by the Padma Bridge river training works could lead to a new meandering plan form not experienced for many decades, but providing the scope of charland reclamation on both banks.

### **1.3 Program Rationale and Objectives**

23. The Main River Flood and Bank Erosion Risk Management Program (FERMIP) is the follow-on project of the Jamuna-Meghna River Erosion Mitigation Project (JMREMP). It aims to sustain incomes and livelihoods of people living along the three main rivers of Bangladesh – the Jamuna, the Ganges, and the Padma. It will enhance resilience to flood and riverbank erosion risks through strengthening the flood and riverbank erosion management system, including the knowledge base and underlying institutions; and by establishing integrated non-structural and structural risk management measures at priority erosion sites and addressing their sustainability.
24. The Program may take a sector-type approach to applying the multi-tranche financing facility (MFF) modality, to allow for (i) the flexible, adaptive, phased interventions that are technically most appropriate given the dynamic river morphology, (ii) strategic longer-term FRERM planning, and (iii) longer-term and more effective support for institutional capacity enhancement in the sector

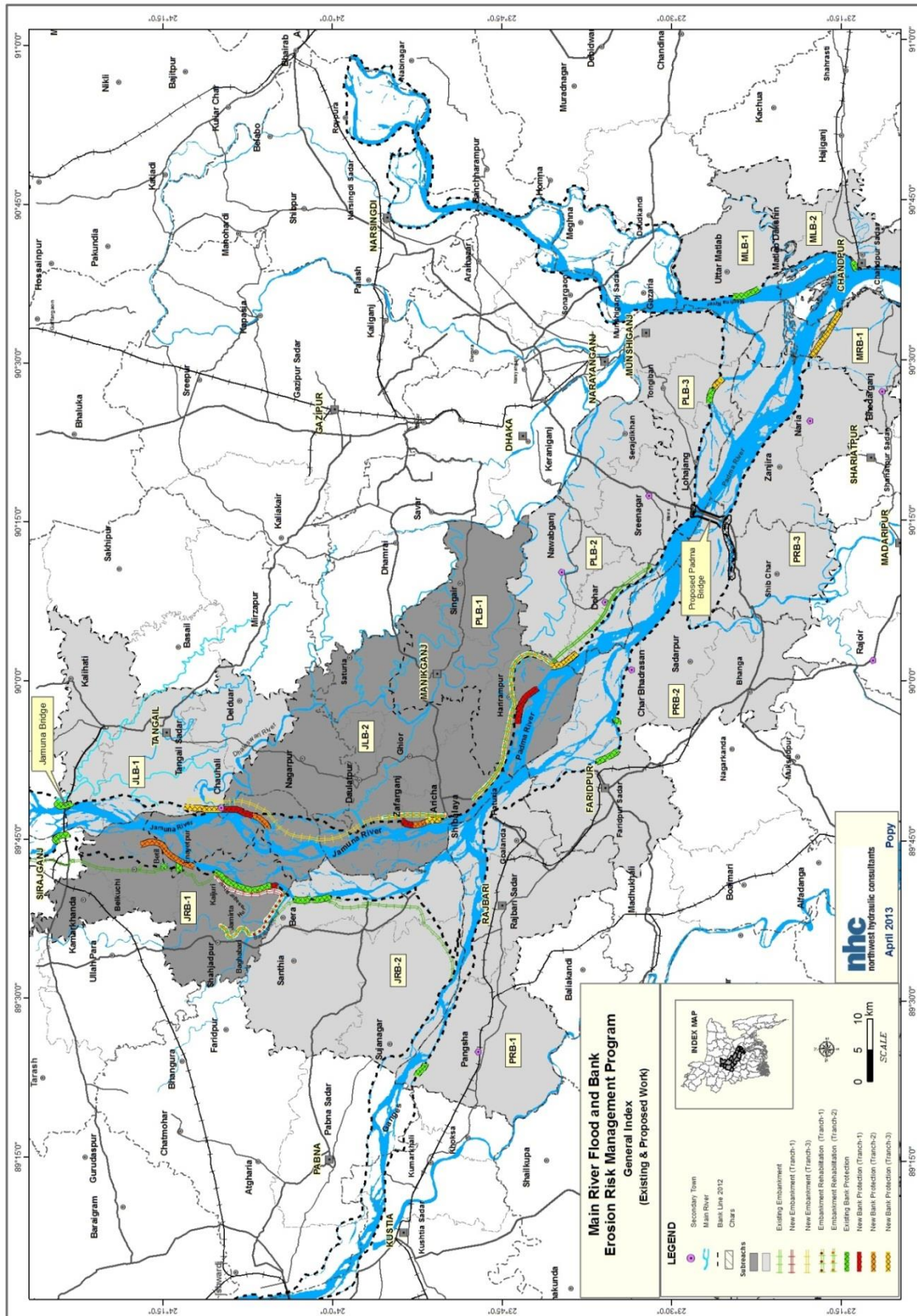


Figure 1-2: Summary Initial Investment Program



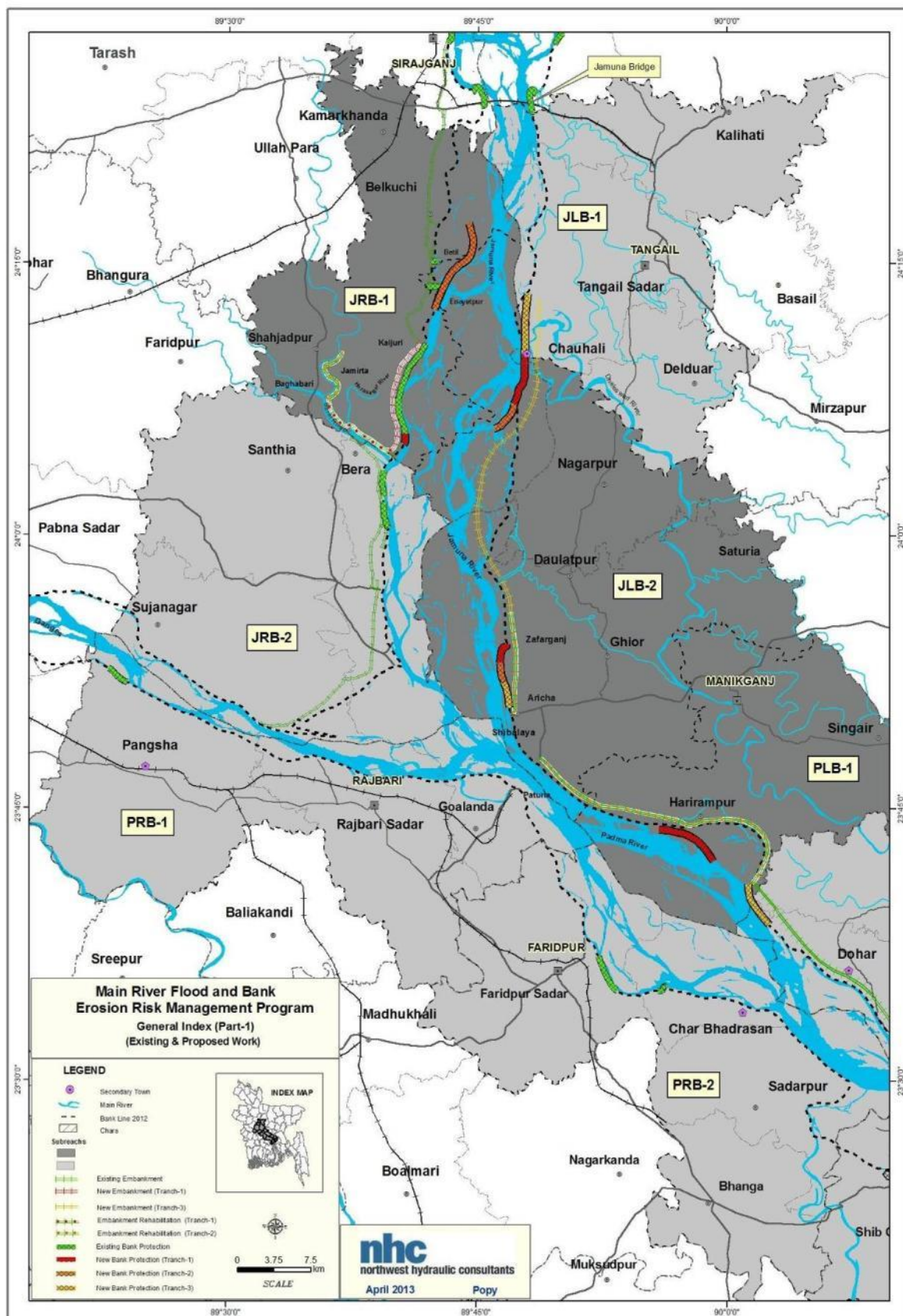
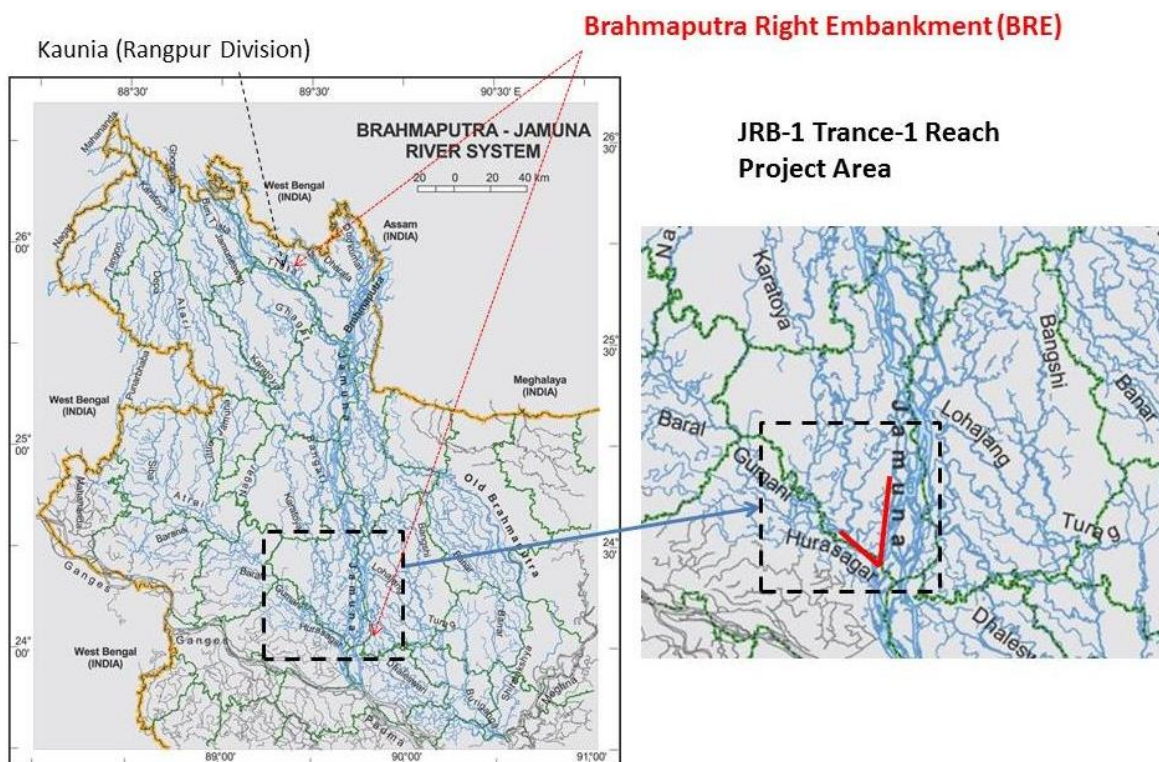


Figure 1-3: Summary Initial Tranche-1 Investment Program

## 2 Embankment (EMB) and Riverbank Protection (RBP)

### 2.1 Background of the JRB-1 Sub-Reach Proposed and Existing Components

25. The area between Enayetpur and Baghabari alongside the Jamuna right bank was protected by the Brahmaputra Right Embankment (BRE). The BRE, located on the right bank of the upstream Teesta River and on the Jamuna River, aimed at providing flood protection and gravity drainage to 240,180 ha, of which 159,000 ha was cultivated. The project started in 1963 and was completed with IDA assistance in 1968, at a cost of Tk 80 million.<sup>2</sup> Originally, a continuous embankment of more than 220 km was constructed from Kaunia (Rangpur Division) to the Hurasagar River, which had to be relocated at places several times due to erosion by the Brahmaputra/Jamuna (Figure 2 1).



**Figure 2-1: Brahmaputra Right Embankment (BRE) & JRB-1 Trance-1 Project Reach**

26. Within the JRB-1 Trance-1 sub-reach, the EMB construction was made alongside the Jamuna right bank from Kaijuri to Baghabari. A 75 meter wide strip of land was acquired at the time of original construction of the EMB. However, roughly 10 Km of the EMB was eroded progressively since 1996 as a consequence of Bangabandhu (Jamuna) Bridge construction.<sup>3</sup>

27. In 2010-2011 under the ADB supported JMREMP, BWDB provided some 10 km of riverbank protection (RBP) parallel to the eroded EMB to stabilize the rapidly eroding bank line. The western flood plain was historically protected by the BRE up to the Hurashagar/Baral River. The erosion during the 1990s brought the once protected area back to the cycle of flooding and erosion, with substantial deposition of sand along the riverbanks (sand carpeting).

<sup>2</sup>Completion of Construction of Brahmaputra Flood Embankment Project, Kaunia to Hurasagar River (IDA Credit 39-PAK). East Pakistan Water and Power Development Authority. East Pakistan Water and Power Development Authority, 1968. [http://books.google.com/books/about/Report\\_on\\_Completion\\_of\\_Construction\\_of.html?id=nNtSvGAACAAJ](http://books.google.com/books/about/Report_on_Completion_of_Construction_of.html?id=nNtSvGAACAAJ)  
[http://www.banglapedia.org/HT/F\\_0105.HTM](http://www.banglapedia.org/HT/F_0105.HTM)

<sup>3</sup>The Jamuna Bridge guide bunds inducted a straight channel downstream of the bridge flowing for about 15 km along the left bank of the braided belt. As a consequence an roughly 15 km long and 5km wide stable attached char has formed along the right bank, south of the bridge's western guide bund. The channel bifurcated into a western and eastern branch at about Enayetpur, the eastern one becoming dominant. While the location of this bifurcation appeared to be quite stable, discharges varied in the two channels downstream. However, where the western flood plain was historically protected by the BRE up to the Hurashagar/Baral River, the last 10 km or so became eroded from Kaijuri to the Hurashagar/Baral outfall.



28. The Hurashagar Flood Control, Drainage, and Irrigation (FCD) Project in this area, consisting of almost 20,000 acres and supporting about 4,000 HHs, became completely in-operational after the BRE was breached and destroyed by erosion (See Figure 2-2 below). The proposed JRB-1 work will reinstate the original 'Hurashagar EMB' and allow the reaping of the benefits from the destroyed Hurashagar FCD Project. This will entail the reconstruction of the BRE for some 12.5 km along the Jamuna River and the embankment along Hurashagar/Baral River (10.5 km) and the Kortoa River (6 km). In addition there will be 1 Km of RBP downstream of the existing protection towards the Hurashagar/Baral; this will stabilize the riverbank to protect the 2 km remaining EMB that had by 2013 not been eroded, which is referred in this RP as the Old Embankment (OE). The reconstructed EMB will provide the backbone for increased agricultural outputs, while again protecting valuable private and public infrastructure from flooding

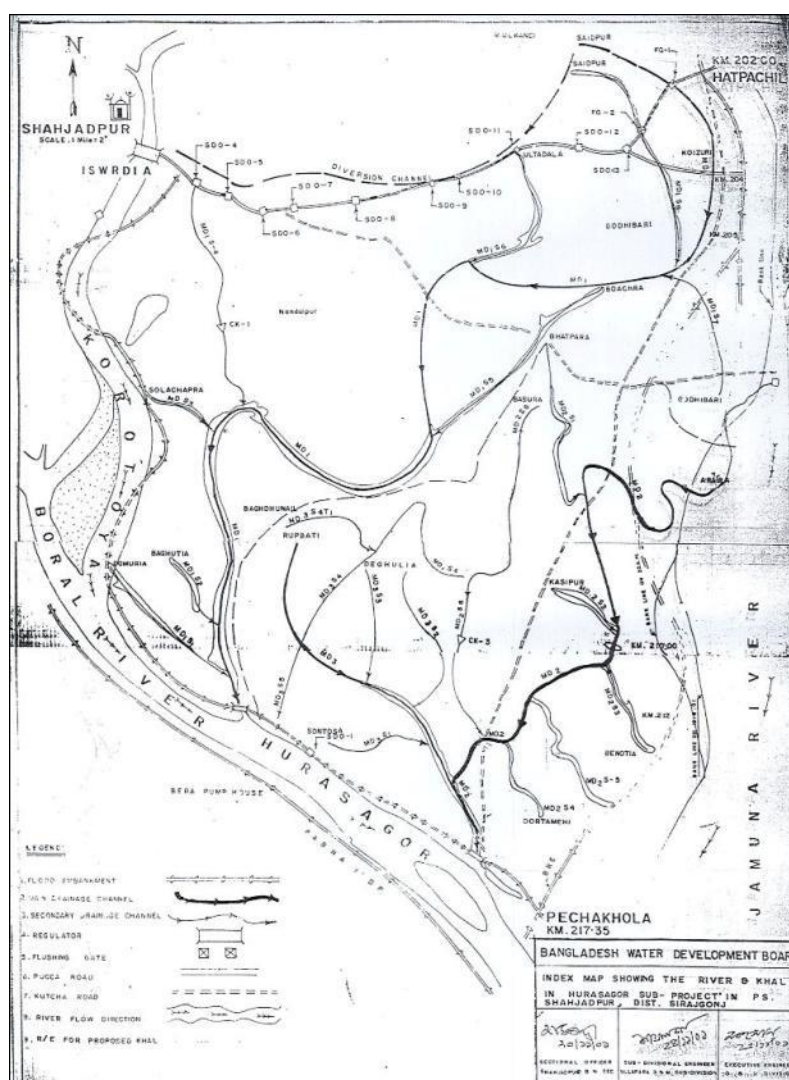


Figure 2-2:Erosion Breached Hurashagar Flood Control, Drainage, and Irrigation (FCD) Project

29. This RP is only for Tranche-1 Jamuna Right Bank's first Sub-Reach (JRB-1):

**Proposed Intervention**

	KM
• New Jamuna Embankment (with a 2 Km Old Embankment sub-section)	12.56
• Rehabilitated Hurashagar/Baral Embankment	10.44
<i>Subtotal</i>	23
• Riverbank Protection near the Old Embankment	1.0

The following Figure 2-3 illustrates the project area proposed and existing EMB components:



**Figure 2-3: JRB-1 Sub-Reach Area - Proposed and Existing Components**

30. Figure 2-4 below is a schematic map of the JRB -1 Sub-Reach, also showing the proposed FERMIP's Tranche-1 interventions: 12.56 Km New Jamuna Embankment (with a 2 Km OE section), the 10.44 Km Rehabilitated Hurashagar/Baral Embankment, and the 1 Km RBP.<sup>4</sup> The map also delineates the twenty-nine mauzas<sup>5</sup> the JRB -1 covers, within Sirajganj District, Rajshahi Division and Shahjampur Upazila. *Note that the Mauza areas to the right of the existing RBP (green line) are under water, having been already eroded by the Jamuna River.*

31. While it's imperative to understand the proposed and existing infrastructure of the JRB -1 Sub-Reach, it's also important to have sense of the resettlement history of the JMREMP's work of 2004-2011, including the roughly 10 km RBP completed in this sub-reach in 2011. This is described in detail in ANNEXURE XI: *Social Background of JRB-1 Sub-Reach Proposed EMB and RBP Components.*

<sup>4</sup> The 7.1 Km Rehabilitated Karatoya Embankment will be built in Tranche-2.

<sup>5</sup> A Mouza Revenue Village is the lowest unit of land administration in Bangladesh. Mouza consists of more than two villages. Alternative spelling is Mouza.

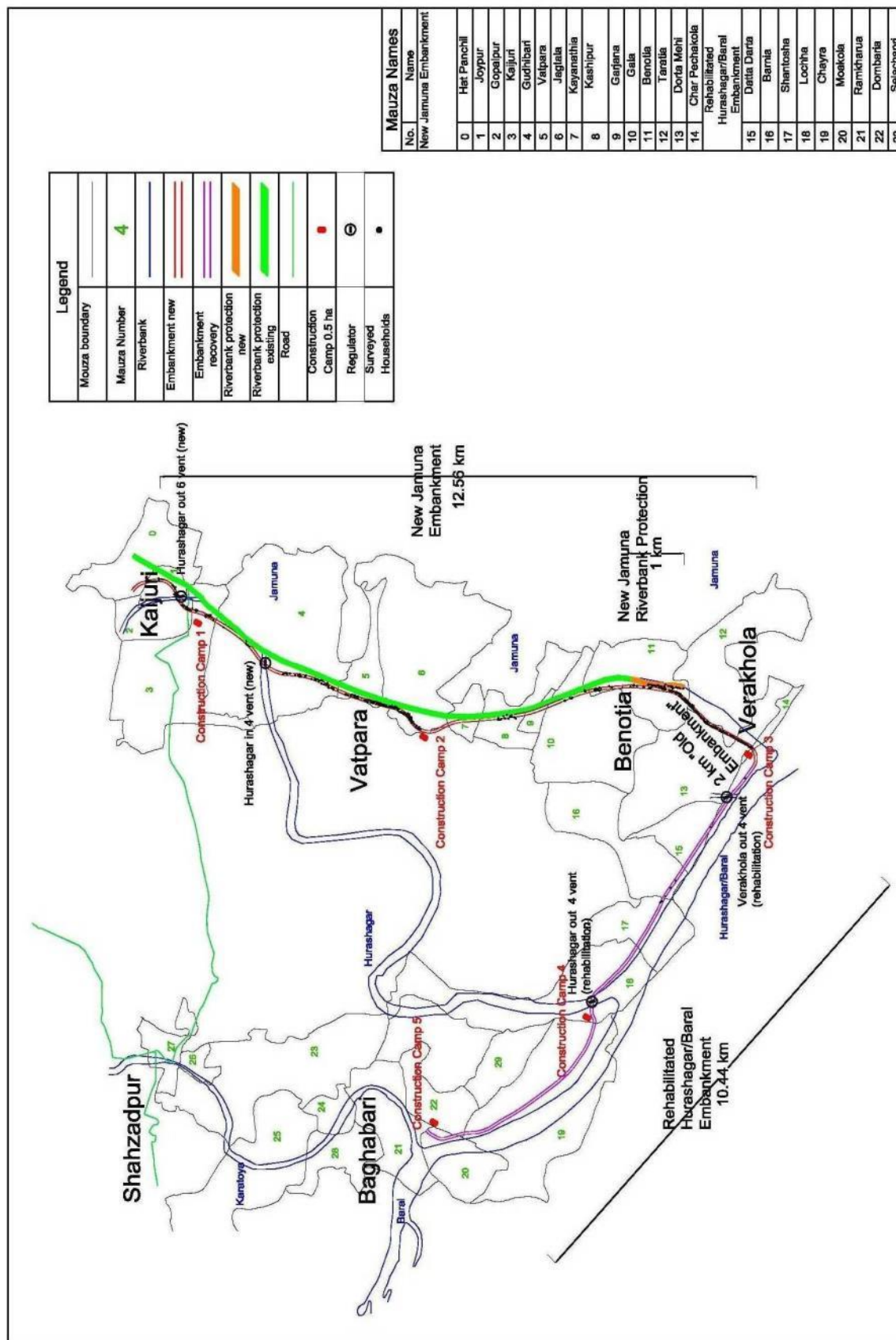


Figure 2-4: Schematic Map of EMB/RBP Intervention



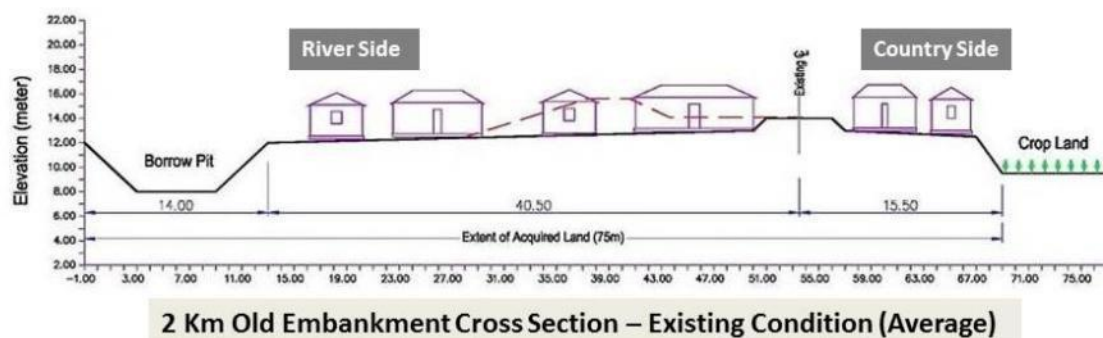
## 2.2 General Description of JRB-1 Sub-Reach Proposed EMB and RBP Components

### 2.2.1 The 2 Km Old Embankment (OE)

32. As described earlier, about 75 meter wide strip of land was acquired at the time of original construction of the JRB-1 EMB. However, roughly 12-13 Km of the EMB was eroded as a consequence of Bangabandhu (Jamuna) Bridge construction in the mid-1990s, excepting the last 2 km OE, which survived erosion.

33. The EMB was so aligned that its country side (C/S) toe coincided with the C/S edge of the acquired 75 m RoW. The center line of the existing OE is about 52 m away from river side (R/S) edge and 16 m away from the C/S edge of the RoW. Part of 75 m RoW was used as a borrow pit, which is along the R/S edge. The land between the R/S slope and borrow pit functioned as berm, i.e., a level space separating the land between the borrow pit and the R/S slope.

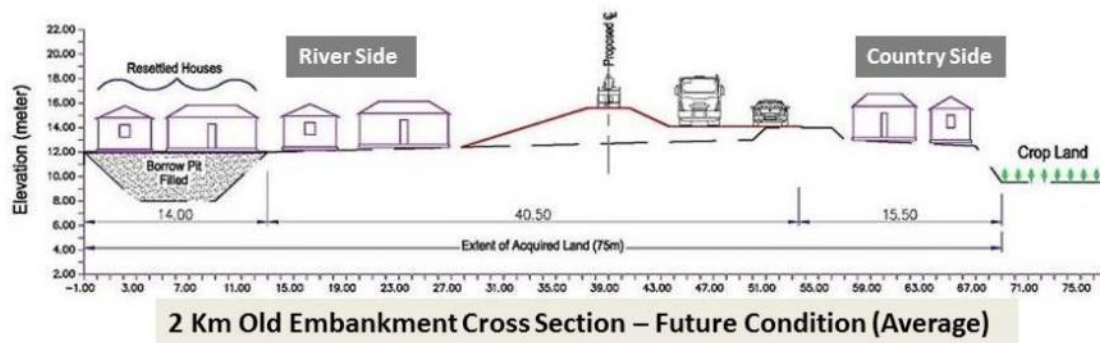
34. Households from of the eroded EMB moved to the surviving OE and formed dense clusters of houses on both slopes, even encroaching part of crest; and households (HHs) also raised berms on the OE slopes to facilitate a formation of their courtyards. As per the original construction, the crest width was 4.30 meter, but barely 4 m remains free and is used as an access road to the OE communities. There is one line of HHs on the C/S slope and a multi-line HHs on the R/S slope. A reconnaissance field trip to the OE taken in February 2013 found around 250-300 HH structures on the C/S and 600-700 on the R/S slopes. The borrow pit has been partly filled by natural deposition and at present is not deep. Figure 2-5 below is a cross section that shows the existing situation of the OE.



**Figure 2-5: 2 Km Old Embankment Existing Design Configuration**

35. The OE will be reconstructed according to new design configuration. A 5 meter high embankment will require a 40 meter or a 45 meter wide base for type-1 and type-2 new design configurations respectively. The first configuration will have a 10 m wide road on the C/S slope, 1.50 m below the crest. The second configuration will also have 8 m wide berm on the R/S slope, in addition to the road. The berm will be one meter below the crest and can be used as temporary shelter for flood victims during high water in the rainy season. The crest width will be 3.20 m for both of the configurations.

36. Figure 2-6 below shows the future design configuration of the OE. The new OE configuration will shift the center line by 10-12 meter towards the R/S slope. Shifting to the R/S will not require land acquisition as the shift will still be within the original 75 m RoW. The existing 'erosion refugee' settlements on the berm can be shifted to the Borrow Pit, filled in with dredged sand from the Jamuna River. Legally the 190 AHs on the 1.5 Ha OE are squatters on BWDB land. But as per the MRW Entitlement Matrix (see Table 7-1 below), and the 'squatters' will have the opportunity to buy a place in the Resettlement Village (RV) with support by the RP INGO.



**Figure 2-6: 2 Km Old Embankment Future Design Configuration**

Figure 2-7 below of the OE shows the Borrow Pit and the proposed RBP along the Jamuna River; and Figure 2-8 shows views of the Borrow Pit from different vantages.



**Figure 2-7: 2 Km Old Embankment- Showing Borrow Pit and Proposed 1 Km RBP**



**Figure 2-8: Views of the 2 Km Old Embankment's Borrow Pit**

## 2.2.2 The New FERMIPEmbankment Design

37. The FERMIPEMB (comprised of the 12.56 Km New Jamuna Embankment including the 2 Km OE, and the 10.44 Km Rehabilitated Hurashagar/Baral Embankment) will acquire a 45m or 50m Row

depending on factors such as land acquisition and resettlement requirements.<sup>6</sup> The 50 m RoW will have a berm for temporary shelter on the R/S slope during flood events. The two design cross section configurations are shown in Figures 2-9 and 2-10 below.<sup>7</sup>

38. Both designs will have an about 5 m high embankment. The FERMIP expects to get tree types allowed by BWDB for the embankment slopes. As such the C/S slope can be used as compensation area for trees that are lost during the construction process and can provide an opportunity for social forestry along the EMB. The EMB will be built from Jamuna River dredged sand. Cohesive soil for the cladding will be recovered from the excavated base layer, and no borrow pits will be required on the flood plain. The crest slopes will be paved with grid stones, through which grass will grow. This will discourage the digging of holes for home steads, tea shops etc. The crest itself will be covered with a thin concrete layer forrick shaw movement and movement of emergency vehicles during flood periods.

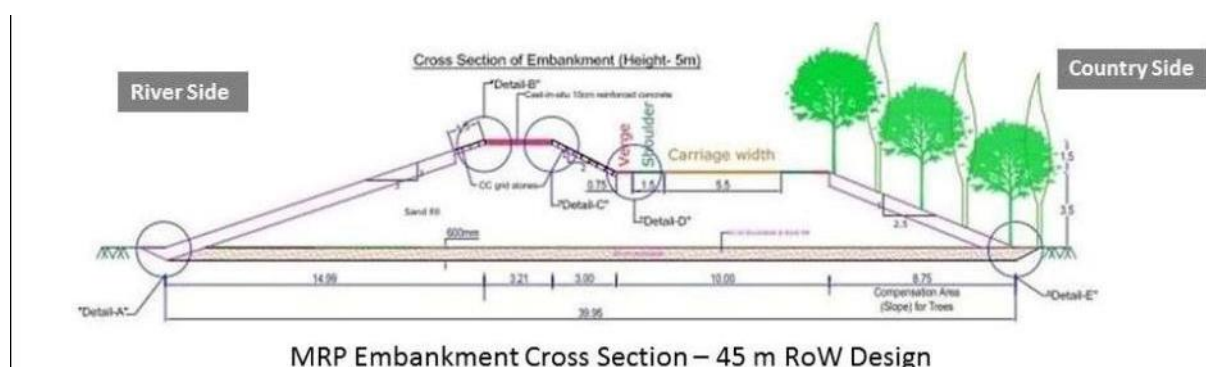


Figure 2-9: FERMIP 45 m RoW Embankment Cross Section

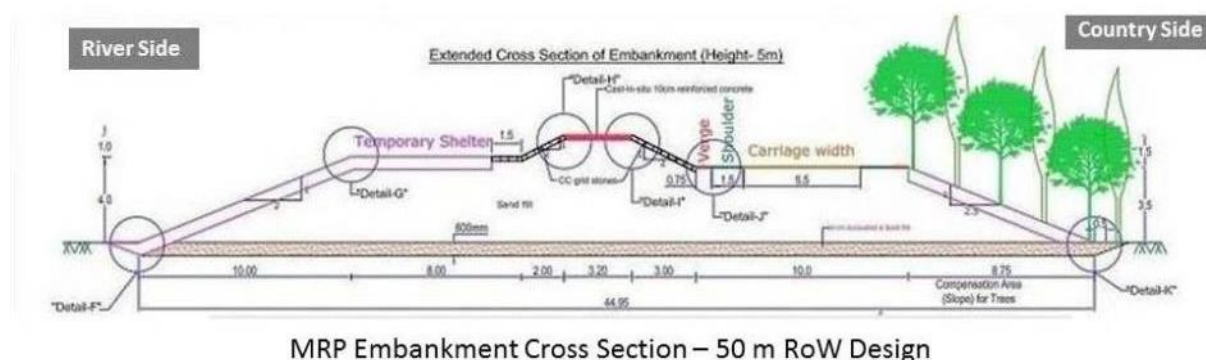


Figure 2-10: FERMIP 50 m RoW Embankment Cross Section

39. The proposed Tranche-2 EMB section of approximately 30 Km Kojuri-Shahjadpur Road, via the Parjona Bridge across Karatoya River, will open the entire area to land transportation to National Road (NR) 5, the Baghabari Port, and the Jamuna Bridge. This will improve connectivity of this neglected and inaccessible JRB-1 sub-reach area, linking farms to market. The EMB gravel road will also be paved in Tranche-2.

40. Figure 2-11 below shows the EMB Road link to Parjona Bridge, Shahjadpur, and NR 5. While this EMB section is not in Tranche-1, it is only shown here in the RP to illustrate the EMB's benefit of improving the JRB-1 sub-reach's connectivity.

<sup>6</sup>The 7.1 Km Rehabilitated Karatoya Embankment will be built in Tranche-2.

<sup>7</sup>Each design RoW includes a 5 m leeway, so the designs actual 'footprints' are 40 and 45 m within the 45 m and 50 m RoWs.





**Figure 2-11: EMB Road link to Parjona Bridge, Shahjadpur, and National Road 5**

### 2.2.3 The Riverbank Protection (RBP) Design

In Tranche-1, there are three other proposed Riverbank Protection (RBP) interventions on the Jamuna's Left Bank (JLB):

#### Proposed JLB-1&2 Interventions

	KM
• Chauhali RBP within the Jamuna Left Bank (JLB)-2 Sub-Reach	5
• Zafferganj RBP within JLB-2 Sub-Reach	2
• Harirampur RBP within Padma Left Ban (PLB)-1 Sub-Reach	7

41. In this RP, only the JRB-1 Embankments and the 1 Km New Jamuna RBP, on the right bank of the Jamuna River, have been surveyed with a 1) 100% Census; 2) 100% Inventory of Losses (IOL); 3) 20% random Socioeconomic (SES) and a 4) 20% random Agricultural Plot Users form for preparing a detailed budget.<sup>8</sup> For the survey of the agricultural plot user, clusters of agricultural plot were identified, using satellite pictures. Of these clusters, 20% were chosen randomly and surveyed.

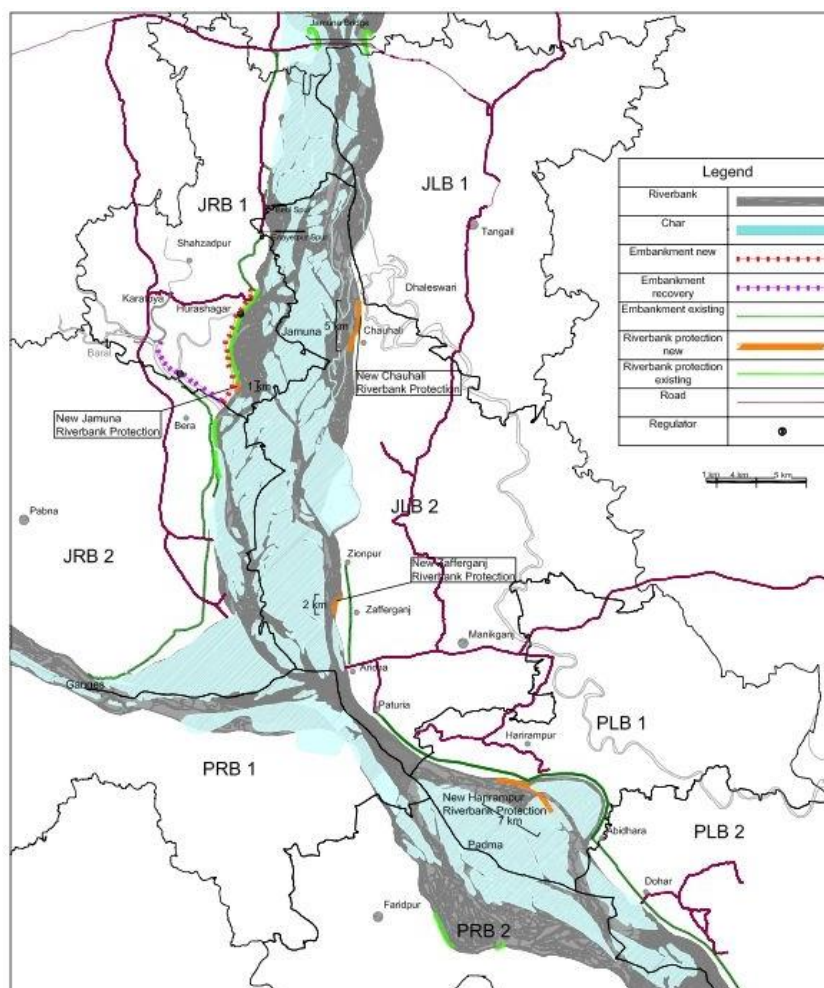
42. The left bank three RBPs will also be constructed in Tranche-1, but the changing morphology of Jamuna and Padma Rivers after two flood seasons before construction can start means that the configuration of the RBPs will be considerably different by the time of the FERMIP implementation. Therefore, for budget purposes, the 1 Km unit costs of the right bank RBPs will be estimated from average costs of the JREMP and the 1 Km New Jamuna RBP; and new sub-project RPs will be drafted for ADB's approval before construction will commence, following the MRB's Resettlement Framework (RF). To estimate the left bank RBP general scope of work, the PPTA team used Google Earth to count houses interventions (See Table 2-1).

<sup>8</sup>See: Chapters 3 and 4 for survey results; Annex VIII: *Technical Note for Resettlement Survey Methodology*; Annex XV: *Questionnaires adapted for iPad: 1) General Census; 2) Socio-economic (SES); 3) Inventory of Losses (IOL); and 4) Sample Agricultural Plot Users*; Annex XVI: RB-1 Tranche-1 March-May 2013 Census HH List; and Chapter 11 for the budget of land acquisition and resettlement costs. The surveys took more than twice the time estimated due to considerable political unrest leading to many *hartals* (strikes).

**Table 2-1: Number of Houses Counted on Tranche-1 Proposed Left Bank RBP Interventions, Image Date 1/12/2013**

RBP	KM	Number of Houses Counted on Google Earth
• Chauhali RBP	5	95
• Zafferganj RBP	2	60
• Harirampur RBP	7	0

Figure 2-13 below shows the proposed Tranche-1 Riverbank Protection interventions.



**Figure 2-12: Proposed Tranche-1 Riverbank Protection Interventions**

43. The 1 Km New Jamuna RBP is in close proximity with the OE settlements and may more impact on structures and agricultural land than the left bank RPBs. As RPBs are built to protect inland embankments, they can be on plain land that is relatively scantily populated due to the threat of erosion. The following photos of the right and left bank RPBs indicates that the left bank interventions may have a lesser displacement impact in some places but otherwise the impacts may be similar to the right bank RBP. This depends on rainy season erosion impacts prior to the FERMIP implementation.

44. While the right bank of the Jamuna River within the JRB-1 Sub-Reach from Jamuna Bridge (JMB) to Hurashagar (around 40 km) had the BRE over decades, the left bank of the Jamuna River has no embankment from the Dhaleswari River to Aricha (40 Km), except for a 12 km section of embankment from Zionpur to Aricha in bad repair. The roughly 62 Km Old Dhaka South West Project Embankment extends from Paturia to Mawa, where the proposed Padma Bridge is to be located.<sup>9</sup> The entire left bank RPBs has very little connectivity.

<sup>9</sup>The Zionpur-Aricha embankment will be rehabilitated in Tranche-2 and a section of the Old Dhaka SW Project Embankment, 30 Km from Paturia to Abidhara will be rehabilitated in Tranche-3.





**Figure 2-13:** through 2-20 are typical photos of the Tranche-1 RBP areas.



**Figure 2-14:**Typical Photos of the 5 KmNew Jamuna RBP



**Figure 2-15: Typical Photos of the 5 KmNew Jamuna RBP**



**Figure 2-16: Typical Photos of the 5 Km Chauhali RBP**



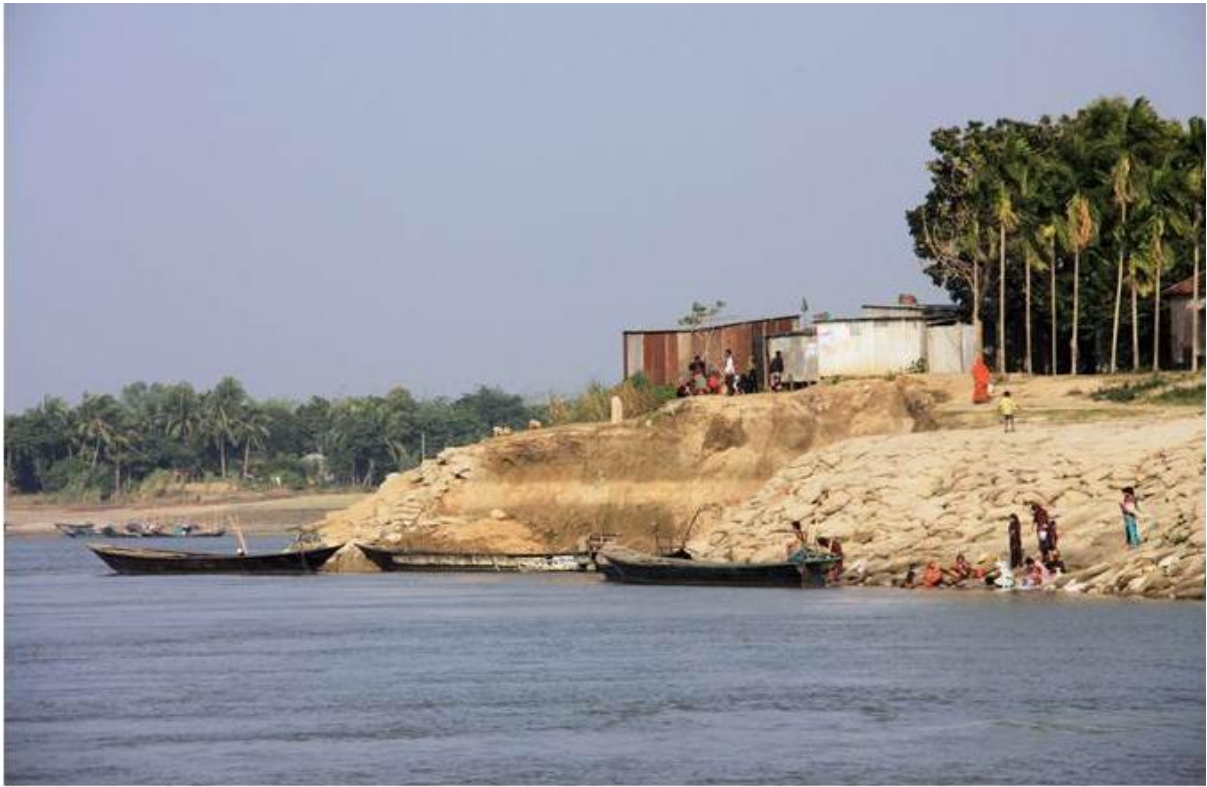


**Figure 2-17: Typical Photos of the 5 Km Chauhali RBP (One Photo Below)**



**Figure 2-18a: Typical Photos of the 2 Km Zafferganj RBP (One Photo Above)**





Fig

ure 2-19b: Typical Photos of the 2 Km Zafferganj RBP



**Figure 2-20a: Typical Photos of the 7 Km Harirampur RBP**



**Figure 2-21b: Typical Photos of the 7 Km Harirampur RBP**

## **2.2.4 Special Land Acquisition Issues with Riverbank Protection (RBP)**

45. Depending on the RBP design configuration, the right-of-way (RoW) along the bank line may be on average from 25 to 36 m wide. Of the land required within the RoW, 30m is above the Lowest Water



Level (LWL), and 45 m is under water or eroded land. The land to be acquired for the ROW, therefore, includes both privately owned land and eroded land along the bank line.

46. The GOB law clearly states that any land (private or government) for development work should be acquired and compensated.<sup>10</sup> From a legal and revenue point of view, the line that marks the LWL with the flood plain during the dry season is considered as the bankline - also called the Alluvial and Diluvial (AD) line, if declared formally by Assistant Commissioner-Land (AC-Land).<sup>11</sup>

47. Land above the LWL to the floodplain (i.e. the slope to be used for bank protection work) is private land (unless already acquired by BWDB). Local people cultivate the land above the LWL during dry season. In Bangladesh, the AD line is not regularly established (by the AC-Land) due to complexity in the process. For the design purpose the LWL will be considered as the demarcated bankline or AD line for bank protection work when the FERMIP is implemented.

48. The scope of work under water after the LWL, will not require relocation but there are issues of acquisition and payment of compensation/assistance. As per the design, the construction of revetment on the stretch above LWL will need relocation of structures.

49. Some land between floodplain and the LWL remains arable during the dry season and is used as private land despite the lack of a legal title. The eroded land outside the AD line goes under the ownership of the government through a chained procedure that ends with the declaration as Khas land by the Additional Deputy Commissioner (ADC). Underwater land in a LA case (if entirely khas) will not require acquisition but transfer between govt. departments should take place through inter-ministerial meeting. In such a case the previous private owners must be identified and Resettlement Benefit paid for losing the chance of regaining it, if re-emerges within 30 years of erosion.<sup>12</sup>

## **2.2.5 Constructing Riverbank Protection**

50. RBP work may be done under fast erosion conditions or under regular conditions. The first requires an adaptive approach for the project to adapt to sometimes unpredictable erosion events. The constantly changing river characteristic often bypasses or outflanks riverbank protection work. The location of erosion permanently shifts making erosion protection work difficult.

### **2.2.5.1 Adaptive Approach for Fast Erosion Conditions**

51. Acute erosion of settlements, flood embankments, or important infrastructure required an immediate response. Fast erosion rates during major river attack often undermined existing work, leaving no time for reaction. As the large rivers in Bangladesh are in a process of widening, this results in permanent riverbank erosion, loss of valuable flood plain land and infrastructure, and erosion of flood embankments with sudden devastating flooding during the monsoon seasons. Measured vertical bed erosion can reach 20 m in less than three weeks. For this reason every protective work has to have some contingency quantities at the deepest point at the end of the slope. This toe protection commonly consisted of a falling apron, a layer of loose elements that launched once scouring started. Figure 2-23

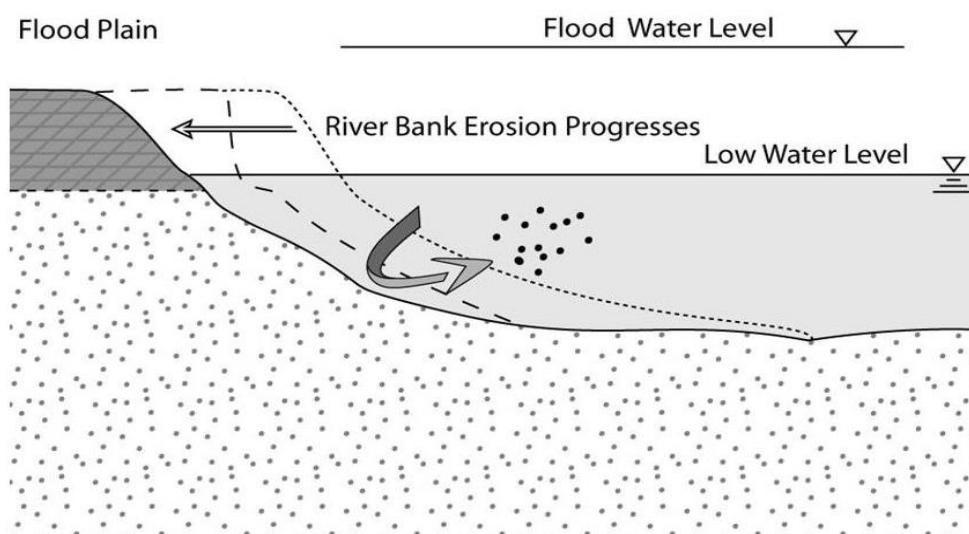
---

<sup>10</sup>The Acquisition and Requisition of Immovable Property Ordinance II (1982) and subsequent amendments of the Ordinance II (1989/93/94) and other land laws and administrative manuals relevant to alluvion/deluvion land, char and khas land administration in Bangladesh. The 1982 Ordinance requires that compensation be paid for (i) land and assets permanently acquired (including standing crops, trees, houses); and (ii) any other damages caused by such acquisition. Alluvial, deluvial and char land survey and settlement (No. 2-2/87/90(1060)/1987; Settlement of char land (No. 2L-3/73/86(19)-R.L/1973; Settlement of Deluviated Lands Reformed in Situ (Memo No. 196(36)-V-177/77-L.S /1978), State Acquisition and Tenancy (Amendment) Act, 1994; Transfer of Khas Land between GOB departments (M:/Sha-10/HUD/general-1/94/345(64)/1994 (source: Land Administration Manual, Vol. 1, Ministry of Land, GOB).

<sup>11</sup> The FERMIP is using the CEGIS AD Line annual assessment.

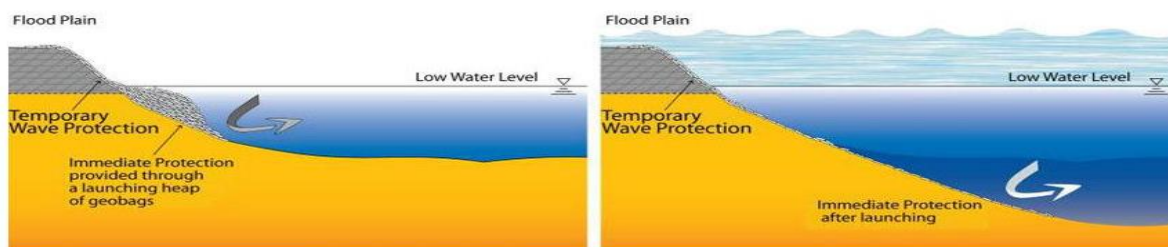
<sup>12</sup> The under-water revetment will be constructed on khas land and nobody will need relocation; but private owners of the land will be compensated as per GOB law and ADB policy on involuntary resettlement. GOB law also covers owners of the char-land, if eroded two years due to bank stabilization in the proposed area. State Acquisition and Tenancy Act 1951 (Section 7) defines the ownership and use right of alluvion (payosti) and diluvion land (sikosti) in the country. Legally, GOB owns the bankline and eroded land in the river. However, the "original" owner(s) can claim the land if it re-emerges in a natural process within 30 years from the date of erosion.

below illustrates this process. Immediate protection stabilized the underwater part at locations of acute erosion.



**Figure 2-22: Adaptive Approach to Fast Eroding Conditions**

52. The best answer to acute erosion is immediate protection consisting of a heap of loose elements dumped from the riverbank. The erosion undercuts this heap and the loose elements launched down the slope, provide a thin protective layer. Figure 2-24 below illustrates this principle using geobags, geo-textile cloth bags filled with local sediment, sand, or concrete. During high water this protection will be largely below water and therefore invisible from the river bank.

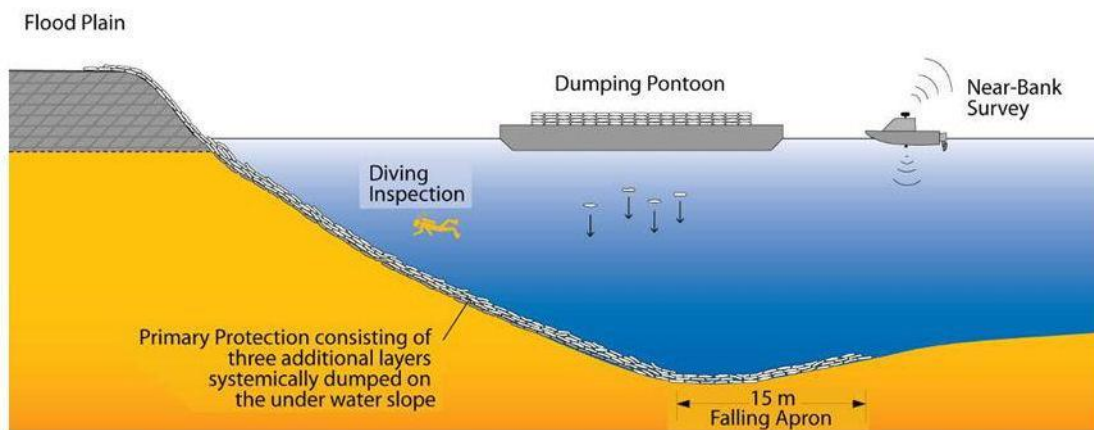


Acute erosion of riverbanks is mitigated through Immediate Protection under water and Temporary Wave Protection above low water level.

**Figure 2-23: Using Geobags, Geo-Textile Cloth Bags Filled With Local Sediment, Sand, or Concrete**

53. Within one year after the construction of immediate protection primary protection has been built, providing a reliable coverage of the thin layer of launched immediate protection. The primary protection consisted of long revetments being able to respond to future river changes to a certain extent. A wide falling apron completes the work at the toe, preventing undercutting of this major protection. To achieve several layers of slope coverage, the work is executed through systematic dumping from the river itself.

54. The project can add up to three additional layers of geobags on average onto the launched falling apron. Naturally, the work is built for the actual river situation permanently surveyed during construction, and checked for completeness through diving inspection. Figure 2-25 illustrates the dumping of these three additional layers of geobags.



Primary Protection stabilizes the bank and prevents failure during future erosion.

**Figure 2-24: Illustration of Primary Protection through Systematically Dumped Geobags**

55. Figure 2-25 is a photo of dumping geobags off an embankment. Figure 2-26 shows local workers, hired from the squatter communities, pulling the geobag dumping barge to a new location.



**Figure 2-25: Photograph of Primary Protection through Systematically Dumped Geobags from Barge**



**Figure 2-26: Photograph of Pulling Geobag Dumping Barge to a new Location**

56. After the completion of main or primary protection, a phase of monitoring, evaluation, and adaptation follows to respond to river changes especially in terms of depth changes and movement of river erosion to areas directly upstream or downstream of the eroded reach. This phase is unpredictable in duration as it depends on the morphological patterns of the river; however experience indicates that it should last for a minimum of five years to address a broad number of issues that can occur during the



river response to major protective works. Adaptation means primarily building the protection to deeper levels to prevent undermining and failure. Also during this phase, and *after* addressing land acquisition and resettlement, permanent wave protection above low water is then built.

57. The final phase is above water permanent wave erosion protection. Figures 2-28 through 2-31 are photographs of the above water embankment area after HHs were resettled away from the area. In this case, an old earthen embankment was then leveled and a new feature, a grout filled mattress, covered a new embankment, re-constructed with cement blocks.



**Figure 2-27: Photograph of an Old Earthen Embankment after HHs were Resettled and the Final (Underwater) Protection was completed**



**Figure 2-28: Photograph an Embankment Newly Re-Constructed with Cement Blocks**



**Figure 2-29: Photograph the old Embankment Preparing for Permanent Protection with Grout Filled Mattress**



**Figure 2-30: Photograph of Re-Constructed Embankment Finished Permanent Protection with Grout Filled Mattress**

### **2.2.6 Measures to Minimize Embankment Impact**

58. All necessary efforts have been made in order to minimize Project impacts on assets and avoid disruption of livelihoods as far as possible. Extensive consultations have been conducted with the







affected communities and people along the New Jamuna Embankment RoW to take in their views and concerns and incorporate the same in the proposed alignment, as far as possible. The original Jamuna embankment, which was lost to river erosion in the 1990s, had a RoW of 75 m, which is still preserved at the 2 Km old embankment (OE). The new and re-constructed Jamuna embankment will have a narrower RoW of 45m and 50m. The 45 m RoW will apply to dense population areas, and the 50m RoW will be used in less densely populated areas along the new embankment. Of the 23 Km new and rehabilitated Jamuna and Hurashagar/Baral embankments, only 2 Km will have a 50 m RoW, which will accommodate a river-side platform for Rainy Season flood refuges. The platform will consist of about 1.6 ha that can be used for recreation, drying crops, and other public uses. The new embankments will be built from river dredged sand. Cohesive soil for the cladding will be recovered from the excavated base layer, and no borrow pits will be required on the flood plain which will minimize the land acquisition for the RoW.

59. FGDs conducted February 2-3, 2013, indicated that settlers on the OE were worried about dislocation, as many of them had made many investments once it appeared that the OE was relatively secure from erosion. On the other hand, a cost analysis showed that re-routing the new RoW to the country side would be a more expensive option than shifting the OE right-of-way 10-15 m towards the river side and filling in the existing borrow pit with dredged sand as a resettlement village. See Figure 2-6: *'2 Km Old Embankment Future Design Configuration'* above. The chosen alternative was to avoid greater land acquisition by shifting the RoW towards the river side. See Figure 2-32 below.




60. Along the new Jamuna embankment, the alignment would have affected six cultural structures. In these cases, the local people were consulted and design changes made accordingly so that only two mosques will be relocated from the RoW, with the consent of the local communities.



**Table 2-2: Issues of Focus Group Discussions (FGDs) for Minimizing Physical Cultural Resource (PCR) Displacement.**

No	Affected Structure	Issue	Points To Consider	Result of Discussion	
1	Elementary School at Koijuri Bazar	The proposed alignment affected an elementary school at Koijuri Bazar	No discussion needed	The alignment was changed to avoid the school	 <p>School</p>
2	Mosque at Pathaliapara	The proposed alignment would affect the mosque in Pathaliapara, which is the mosque for the whole population in that village	Mosque for Whole Village People Plan to Build a New Mosque at the Same Plot	Alignment was changed to avoid the mosque	 <p>Mosque</p>
3	Mosque at Ghudi Bari	The proposed alignment would affect a mosque in Ghudi Bari.	villagers want to rebuild the mosque they own the land besides the existing mosque	Imam and villagers accept to shift the new mosque to the place besides the alignment	 <p>Mosque</p>
4	Graveyard at Koijuri	The original alignment would affect a part of the graveyard	No discussion needed	Alignment was shifted marginally to avoid the graveyard	 <p>Graveyard</p>



No	Affected Structure	Issue	Points To Consider	Result of Discussion	
5	Graveyard at Jagtala	Due to a curve in the riverbank, the alignment would affect a graveyard	villagers do not agree to relocate parts of the graveyard next to the graveyard is an Eidgah <sup>13</sup> south of the Eidgah, the bazar of Jagtala starts	The alignment was changed to not affect the religious structures	 <p>Graveyard</p>  <p>Eidgah</p>
6	Mosque at Verakhola	The mosque is on the proposed alignment for the new embankment	The alignment can not be changed as the new embankment has to follow the old embankment The people in the village need the mosque, so it should be reconstructed nearby	The villagers agree to shift the mosque, but demand that it will be reconstructed nearby.	

<sup>13</sup> In Islamic culture, an Eidgah or Idgah (Urdu: عیدگاہ) is an open-air mosque usually outside the city (or at the outskirts) to perform the Salat al Eid (Eid prayers) for Eid ul-Fitr and Eid al-Adha. It is usually a public place. At the end of the holy month of Ramadan, Muslims celebrate by first offering prayers at an Eidgah. It is a large open ground for people to assemble and offer their prayers early in the morning on the Eid day. It was a practice of the Prophet Muhammad to perform the Eid salaah (prayer) in an Eidgah at the outskirts of the city. Hence, it is considered a sunnah to perform Eid salaah at the Eidgah. The very first Eidgah was at the outskirts of Medina nearly 1,000 footsteps from Masjid al Nabawi. <http://en.wikipedia.org/wiki/Eidgah>

### 2.2.7 Proposed 1 Km New Jamuna Riverbank Protection

61. Figure 2-31 below illustrates the proposed 1 Km New Jamuna RBP to build constructed in Tranche-1. The RBP will have a RoW of 75 m, 45 m below the Low Water Level (LWL) and 30 m above the bankline, also known legally as the AD Line. This will complete the 10 Km existing RBP stretching up to Koijuri built by the JMREMP 2010-2011. Construction methods were covered in the above 2.3.5 Constructing Riverbank Protection.

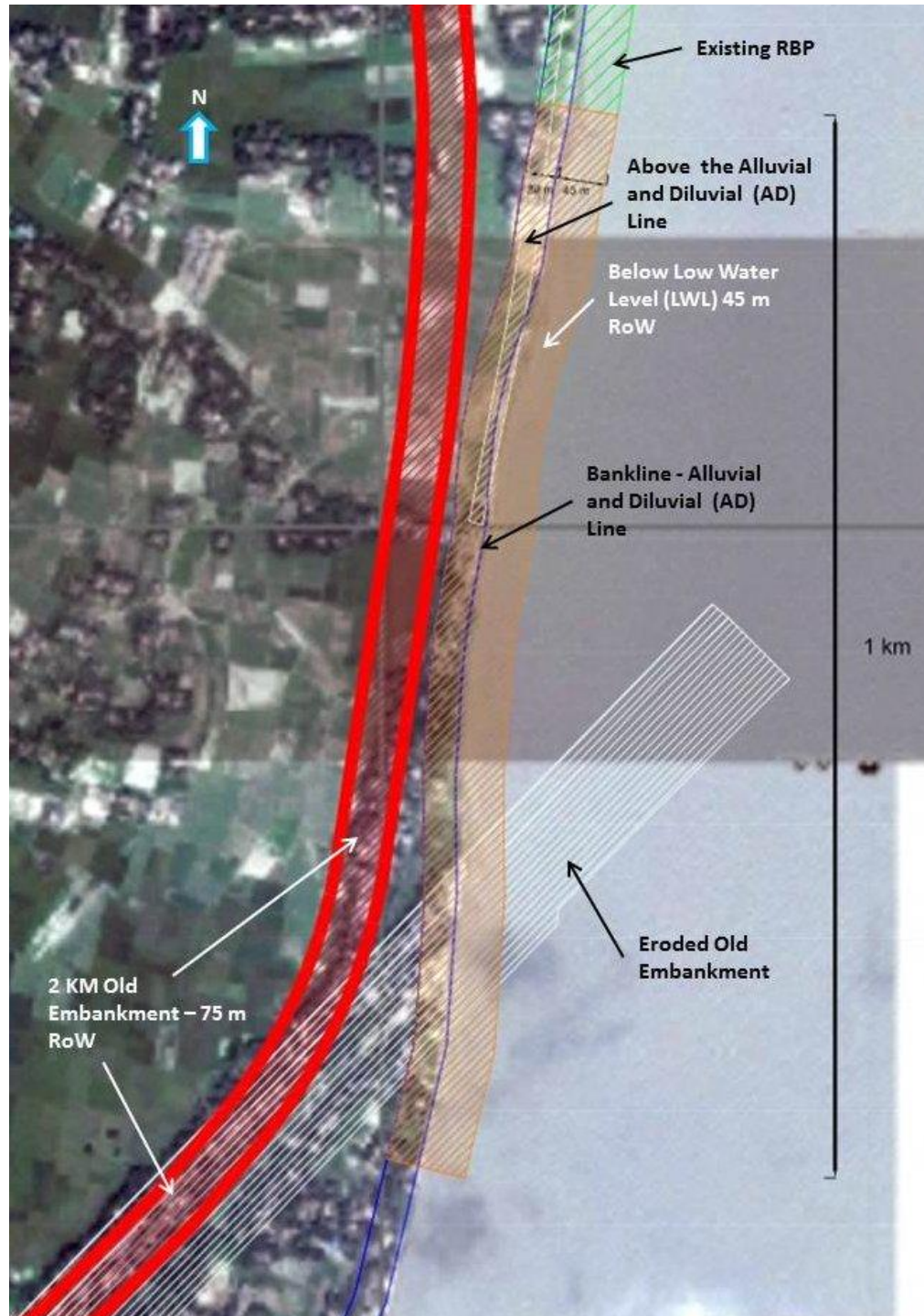


Figure 2-32: Proposed 1 Km New Jamuna Riverbank Protection (RBP)

## 3 Socio-economic Profile of the Affected Population

### 3.1 Tranche-1 Area

62. Tranche-1 area includes three (3) sub-reaches out of 13 (Table 1-1): Jamuna Right Bank (JRB)-1, Jamuna Left Bank (JLB)-2, and Padma Left Bank (PLB)-1. The administrative locations of Tranche-1 cover two Divisions, three Districts and 12 Upazilas. The Tranche-1 area covers 381,426 hectare (ha) of land. Irrespective of sub-reaches, the Tranche-1 area has 78,423 ha, 276,733 ha, and 26,270 ha of land in Sirajganj, Manikganj and Tangail Districts, respectively out of total 381,426 ha. The administrative locations of three sub-reaches are presented in Table 3.1 below.

**Table 3-1: Sub-Reaches and the Administrative Locations of the Tranche-1 Area**

Sub-reaches	Divisions	Districts	Upazillas	Area (Hectare)
Jamuna Right Bank-1	Rajshahi	Sirajganj	Belkuchi	15,888
			Kamarkhanda	9,080
			Shahjampur	32,416
Jamuna Left Bank-2	Dhaka	Manikganj	Daulatpur	21,834
			Ghior	14,892
			Saturia	14,018
			Shibalaya	19,919
	Rajshahi	Sirajganj	Chauhali	21,039
Padma Left Bank-1	Dhaka	Manikganj	Nagarpur	26,270
			Harirampur	24,431
			Manikganj Sadar	21,516
			Singair	21,756

Source: Population Census 2011, BBS

### 3.2 General Profile of the Tranche-1 Districts

#### 3.2.1 Demographic Aspects

63. The population in the Tranche-1 area is 2,893,578,<sup>14</sup> which comprises 49.24% male and 50.76% female. The sex ratio is 97 which indicate that 97 males per 100 females, i.e., female population are higher than the male population. The disaggregated result of the population distribution in the Tranche-1 Districts shows that highest number of population lives in Tangail District (3,605,083) followed by Sirajganj (3,097,489) and Manikganj (1,392,867) Districts. But in the case of Tranche-1 Upazilas the highest number of population lives in the Upazilas of Manikganj District followed by Sirajganj and Tangail.

64. Population density in Bangladesh is 976, while in Tranche-1 area is 1,208, i.e., 1,208 persons per square kilometre, which is higher than the national average (Table 3.2).

#### 3.2.2 Ownership of Agricultural Land

65. In the Tranche-1 Districts, 62.50%, 58.19%, and 52.11% households respectively of Tangail, Manikganj and Sirajganj Districts have agricultural land. The households who live in urban areas have less quantity of land compared to the households of rural areas. Usually rural people depend on agriculture for their livelihood, as Bangladesh is predominantly an agricultural country. Per capita agricultural land own by the people in Sirajganj is 0.07 ha, in Tangail is 0.59 ha and in Manikganj is 0.09 ha (Table 3-3).

**Table 3-2: Population Distribution in Tranche-1 Area**

<sup>14</sup>Source: Population Census 2011, BBS

Districts	Upazillas	Population					Sex Ratio	Population density(sq. km.)
		Both	Male		Female			
		No.	No.	%	No.	%		
Sirajganj	Belkuchi	352,835	179,738	50.9	173,097	49.0	104	2,221
	Kamarkhanda	138,645	68,411	49.3	70,234	50.6	97	1,527
	Shahjadpur	561076	283330	50.5	277746	49.5	102	1,731
	Chauhali	160,063	80,252	50.1	79,811	49.8	101	761
	Sub total	1,212,619	611,731	50.4	600,888	49.5	102	
Manikganj	Daulatpur	167,026	80,489	48.1	86,537	51.8	93	765
	Ghior	146,292	70,945	48.5	75,347	51.5	94	982
	Saturia	171,494	83,653	48.7	87,841	51.2	95	1,223
	Shibalaya	171,873	85,216	49.5	86,657	50.4	98	863
	Harirampur	139,318	65,815	47.2	73,503	52.7	90	570
	Manikganj Sadar	309,413	149,407	48.2	160,006	51.7	93	1,438
	Singair	287,451	140,834	48.9	146,617	51.0	96	1,321
	Sub total	1,392,867	676,359	48.5	716,508	51.4	94	
Tangail	Nagarpur	288,092	136,585	47.4	151,507	52.5	90	1,097
	Sub total	288,092	136585	47.4	151,507	52.5	90	
Tranche-1 Area		2,893,578	1,424,675	49.2	1,468,903	50.7	97	
Sirajganj District		3,097,489	1,551,368	50.0	1,546,121	49.9	100	1,290
Manikganj District		1,392,867	676,359	48.5	716,508	51.4	94	1,007
Tangail District		3,605,083	1,757,370	48.7	1,847,713	51.2	95	1,056

Source: Population Census 2011, BBS

**Table 3-3: Ownership Pattern of Agricultural Land in Tranche-1 Districts**

Project District	Total Households	Households Own Agri-Land		Cultivable Land Per Head (Ha)*
		In Number	In %Age	
<b>Sirajganj</b>	656,830	342,289	52.11	0.07
<b>Urban</b>	29,977	1,682	5.61	
<b>Rural</b>	626,853	340,607	54.34	
<b>Manikganj</b>	293,977	171,068	58.19	0.09
<b>Urban</b>	13,019	3,350	25.73	
<b>Rural</b>	280,958	167,718	59.70	
<b>Tangail</b>	801,637	501,032	62.50	0.59
<b>Urban</b>	32,278	4,586	14.21	
<b>Rural</b>	769,359	496,446	64.53	

Source: Census of Agriculture 2008, Zila: Sirajganj, Manikganj and Tangail districts publish in 2011

\*Source: www.banglapedia.org

### 3.2.3 Land Use Pattern

66. The land use pattern includes mainly the agricultural land use by its cropping intensity and its irrigation coverage in the Tranche-1 area. Table 3.4 shows the land use pattern of the area. Sirajganj and Tangail Districts have 50.48 and 11,087 ha of forests. Rivers occupy a good portion of areas of Belkuchi (2,965 ha), Shahjadpur (5,445 ha), Chauhali (5,479 ha), Daulatpur (2,596 ha), Shibalaya (3,192 ha), and Harirampur (2,841 ha) Upazilas of Tranche-1 Districts (NWRD database in CEGIS).

**Table 3-4: Land Use in Tranche-1 Districts**

Districts	Upazillas	Land Use by Area						
		TotalCulti vailableLand (ha)	FallowLa nd (ha)	Single Crop (%)	Double Crop (%)	Triple Crop (%)	Land Under Irrigation (%)	River (ha)
Sirajganj	Belkuchi	7,316	2,503	42	15	43	67	2,965
	Kamarkhanda							-
	Shahjampur	23,545	162	14	59	27	68	5,445
	Chauhali	7,251	7,390	60	30	10	40	5,479
Manikganj	Daulatpur	15,497	140	25	65	10	31	2,596
	Ghior	14,595	-	44	34	22	32	-
	Saturia	21,182	45	-	-	-	-	-
	Shibalaya	12,011	3,004	18	75	6	30	3,192
	Harirampur	11,759	12,786	37	49	14	30	2,841
	Manikganj Sadar	16,659	138	9	61	29	48	-
	Singair	16,194	80	17	71	12	51	-
Tangail	Nagarpur	22,592	-	16	48	36	-	-
Sirajganj District		179,964	15,702	19	59	21	74	-
Manikganj District		107,897	16,193	25	59	16	40	-
Tangail District		338,653	17,466	19	50	31	60	-
<b>Grand Total</b>		<b>626,514</b>	<b>49,361</b>	-	-	-	-	

Source: [www.banglapedia.org](http://www.banglapedia.org)

### 3.2.4 Access to Socio-economic Facilities

#### 3.2.4.1 Health Facilities

67. The health facilities available in the Tranche-1 area are District/Sadar hospitals, Upazila health centers, Union sub centers, union family welfare centers, community clinics at ward level, private health clinics/hospitals, etc. There are some satellite clinics also at village level. Specialised hospitals are available at District level such as Sirajganj District has 1 heart disease clinic, 3 mother and child welfare centre, 1 children's hospital, 2 eye hospitals, 1 diabetic clinic, etc. Tangail District has 1 TB clinic, 1 mother and child welfare centre, etc. and Manikganj District has 1 diabetic hospital, 2 maternity and child care centres, etc.

68. In the Upazila level, the Upazila health & family planning officer (UHFPO) looks after the Upazila hospital (31 to 50 beds). In the union level, three kinds of health facilities may exist, viz. rural health center, union sub-center or union health & family welfare center (UHFWC). In a Union health facility, a medical doctor and medical assistants provide health service to the people. At the ward level, one community clinic (CC) is for every 6,000 population. At the ward or village levels, there are domiciliary workers, one for every 5 to 6 thousand population. The existing Union and Upazila facilities also provide community clinic services.

69. Health services in the FERMIP affected areas as evident from the study villages are poor. Most people go to quacks and medicine shops for minor medical treatment.

70. The available health facilities in the districts within Tranche 1 area are presented below in Table 3-5.

**Table 3-5: Medical Facilities in Tranche-1 Districts**

Districts	Upazillas	Health Facilities (in Number)					
		District/ Sadar Hos- pital	Upazilla H ealth Cent er	Union Sub- Center	Union Family Welfare Center	Community Clinic	Private Clinic/ Hospitals
Sirajganj	Belkuchi	-	1	2	5	42	1
	Kamarkhanda	-	1	-	4	16	-
	Shahjampur	-	1	12	8	-	20
	Chauhali	-	1	1	1	9	3
Manikganj	Daulatpur	-	1	3	5	17	3
	Ghior	-	1	7	6	20	2
	Saturia	-	1	6	3	-	-
	Shibalaya	-	1	-	5	-	-
	Harirampur	-	1	5	4	-	-
	Manikganj Sadar	1	-	-	10	-	4
	Singair	-	1	-	10	11	1
Tangail	Nagarpur	-	1	-	12	-	-
<b>Grand Total</b>		<b>1</b>	<b>11</b>	<b>36</b>	<b>73</b>	<b>115</b>	<b>34</b>

Source: Upazila Health Complex (Statistics section) and www.banglapedia.org

### 3.2.4.2 Educational Facilities

71. Education is a vital prerequisite for combating poverty, empowering women, protecting children from hazardous and exploitative labor and sexual exploitation, promoting human rights and democracy, protecting the environment, and influencing population growth (GoB-UNICEF, 2010).

The literacy rate of the Tranche-1 area is lower than the national literacy rate of 51.8% (Table 3.6). The highest literacy rate is seen in Manikganj District (49.2%) followed by Tangail (46.8%) and Sirajganj (42.1) Districts. In the case of Upazilas, Daulatpur Upazila and Manikganj Sadar Upazila of Manikganj District have the lowest (35.0%) and highest (56.0%) literacy rates, respectively.

**Table 3-6: Literacy Rate in the Tranche-1 Area**

Districts	Upazillas	Literacy Rate (%)		
		Both	Male	Female
Sirajganj	Belkuchi	46	48	43
	Kamarkhanda	46	49	44
	Shahjampur	38	42	35
	Chauhali	37	41	33
Manikganj	Daulatpur	35	40	30
	Ghior	55	58	51
	Saturia	47	52	43
	Shibalaya	53	57	49
	Harirampur	48	50	47
	Manikganj Sadar	56	59	53
	Singair	46	48	44
Tangail	Nagarpur	43	46	40
Sirajganj District		<b>42.1</b>	<b>45.1</b>	<b>39.0</b>
Manikganj District		<b>49.2</b>	<b>52.6</b>	<b>46.0</b>
Tangail District		<b>46.8</b>	<b>50.0</b>	<b>43.8</b>
Bangladesh		<b>51.8</b>	<b>54.1</b>	<b>49.4</b>

Source: Population Census 2011, BBS



72. The educational facilities in the Tranche-1 area are primary and high schools, college, Ebtedayee and Alim/Fazil madrasas. The number of those facilities in the Tranche-1 area is presented the Table 3-7 below.

**Table 3-7: Educational Infrastructures in Project Districts**

Districts	Upazillas	Educational Facilities (Number)					
		Primary School	High School	College	Ebtedayee Madrasa	Dakhil Madrasa	Alim/Fazil Madrasa
Sirajganj	Belkuchi	146	27	6	11	-	-
	Kamarkhanda	83	21	7	4	9	2
	Shahjadpur	218	46	15	11	13	6
	Chauhali	113	21	7	5	15	3
Manikganj	Daulatpur	-	18	5	4	-	2
	Ghior	81	21	5	-	2	1
	Saturia	76	17	3	4	4	-
	Shibalaya	73	20	2	2	1	
	Harirampur	82	16	3	-	2	-
	Manikganj Sadar	111	40	10	-	4	1
	Singair	87	23	2	-	5	1
Tangail	Nagarpur	141	41	5	2	16	4
<b>Grand Total</b>		<b>1,211</b>	<b>311</b>	<b>70</b>	<b>43</b>	<b>71</b>	<b>20</b>
Sirajganj District		1,383	292	83	249		
Manikganj District		878	137	24	87		
Tangail District		2,781	386	58	174		

Source: Respective Upazila level Primary and Higher Secondary Education office. [www.banglapedia.org](http://www.banglapedia.org)

### 3.3 Socioeconomic Profile of Affected Population

73. The following section presents the key findings with regard to the socio-economic profile of the affected population in the Tranche-1 JRB-1 Sub-reach, as derived from census and socioeconomic (SES) surveys conducted in March-April 2013.

#### 3.3.1 Demographic Information

74. **Sex and Marital Status of the Affected Household(AH)Heads:** In the Tranche-1Embankment (EMB) area, 594AH were found on the alignment. From among the AHs, 548 (92%) are male headed households (HHs) and the remaining 48 (8%) are female headed. Out of 548 male HH heads, 535(98%) are married and 13 (2%) are not married. In the case of the female HH heads, 43 (90%) are widows, and the remaining 4 (8%) and 1 (2%) are married or separated respectively.

75. In River Bank Protection (RBP) area, 42 AHs were found on the alignment. From among these, 34 (81%) are male headed HHs and the remaining 8 (19.05%) are female headed. Out of 34 male HH heads, all (100%) are married. In the case of the female HH heads, all (100%) are widows.

76. **Affected Population by Age and Sex:** The 594 AHsin the EMBarea comprise a4,200 population, 2,255(54%) of which are male and 1,945 (46%) are female. The male population is higher than the female population. The age groups of 0-4 and 25-44 by sex consist of higher female population. The demographic dependency (DDR) ratio of the households is 62.6%.<sup>15</sup> The HH size is the population distribution in the RBP area is 42 AHs comprising of a 360 population. The DDR of the households is 80.9%. The HH size is 8.6. See Table 3-8.

<sup>15</sup>In economics and geography the dependency ratio is an age-population ratio of those typically not in the labor force (the dependent part) and those typically in the labor force (the productive part). It is used to measure the pressure on productive population. [http://en.wikipedia.org/wiki/Dependency\\_ratio](http://en.wikipedia.org/wiki/Dependency_ratio) According to the World Bank, the national DDR was 59 in 2011. <http://data.worldbank.org/indicator/SP.POP.DPND>

**Table 3-8: Affected Populations by Age and Sex (%)**

Age group	Embankment (n=594)			RBP(n=42)		
	Male	Female	Total (%)	Male	Female	Total (%)
0-4	125	164	7	9	19	8
5-14	577	552	27	67	48	32
15-24	440	203	15	37	19	16
25-44	699	715	34	49	53	28
45-59	273	253	13	21	20	11
60+	141	58	5	11	7	5
<b>Subtotal</b>	<b>2,255</b>	<b>1945</b>	<b>--</b>	<b>194</b>	<b>166</b>	<b>--</b>
<b>Subtotal %</b>	<b>54</b>	<b>46</b>	<b>--</b>	<b>74</b>	<b>26</b>	<b>--</b>
<b>Total</b>	<b>4,200</b>		<b>100</b>	<b>360</b>		<b>100</b>

77. Overall, the EMB and RBP have 1184 AHs, comprising a non-agricultural population of 4,560 and agricultural population of 4,393.

78. **Religion:** In the EMB area, 98% of the households are Muslim; and the remaining are Hindus or 'other,' while all of the HHs in the RBP area are Muslim.

79. **Ethnicity:** Almost all (99%) of the HH in the EMB area and all (100%) of the HH in the RBP area are mainland Bangladeshi. The remaining households (1.3%) in the embankment area are charland Bangladeshi and others. There are no indigenous people (IPs).

80. The majority of the male headed (60%) and female headed (54%) AHs in the EMB area and all (100%) of the male and female headed AHs in the RBP area have lived in their respective places for more than 10 years. The remaining 13% and 15% male and female headed AHs and 27% and 31% male and female headed AHs respectively in the EMB and RBP areas have lived for 6-10 years and for 1-5 years in the EMB area.

81. Some 64% and 71% of the male and female headed AHs in the EMB area and 65% and 50% of the male and female headed HHs in the RBP area have come to this area due to the river bank erosion.

82. **Displacement of Households due to River Bank Erosion:** The AHswere displaced from one place to another several times because of river bank erosion. Thus from among the displaced households in the EMB area, 39% and 59% male and female headed AHswere displaced three or more times (>3),while 42% and 21% male and female headed AHs two times, 18.70% and 20.59% male and female headed AHs for one time.

83. From among the displaced households in the RBP area, 45% and 25% male and female headed AHs displaced for three or more (>3), while 36% and 50% male and female headed AHs for two times, and 18% and 25% male and female headed AHs for one time.

84. **Disabled Persons in the Households:** Only 10 persons were found disabled in the EMB area. Nine disabled persons belong to MHH and one person to FHH.From among the disabled persons, eight are female and two are male. There are no disabled people in the RBP area.

### 3.3.2 Level of Education

85. This section describes gender disaggregated educational status of the household heads and members. The illiteracy rate of the AH heads, both in the EMB(male 76% and female 94%) and RBP (male 82% and female 100%) areas, is higher than that of AH members(male 43% and female 55%). This indicates that the illiteracy rate is decreasing in the AHs in the study area.

86. Disaggregated results show that the illiteracy rate for the females is higher than that of the males. The female literacy rate is much higher in the case of completed primary education of the AHs members compared to that of male; the female dropout rate is less at the primary level (Table 3-9).



**Table 3-9: Level of Education of Affected Population (7 years and above)**

Level of Education	Embankment				RBP <sup>16</sup>	
	HH Head %		HH Members %		HH Head %	
	Male	Female	Male	Female	Male	Female
Illiterate	76	94	43	55	82	100
Some Primary	14	2	27	19	6	0
Completed Primary	2	0	5	12	3	0
Some Secondary/Vocational	3	2	7	4	3	0
Completed Secondary/Vocational	4	2	11	8	6	0
Tertiary	2	0	9	2	0	0
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

### 3.3.3 Occupational Profile

87. In the case of occupation of the male AH heads, the dominance of agricultural and non-agricultural day labor, business and hand loom weaving are evident in the EMB and RBP areas. Hand loom weaving is an area-specific business and is one of the most important occupations of the study area; both male and female AH heads are involved in this occupation. The male AH heads also enjoy more occupational diversity. Culturally, women have limited access to economic activities; as such the occupational distribution shows gender inequity - most of the female AH heads are engaged with household chores, 73% and 63% in the embankment and RBP areas respectively. See Table 3-10.

**Table 3-10: Primary Occupation of Affected Household Heads**

Occupation	Embankment				River Bank Protection			
	MHH		FHH		MHH		FHH	
	No	(%)	No	(%)	No	(%)	No	(%)
Agricultural Labor	173	32	-	-	6	18	1	13
Daily Labor	113	21	10	21	8	24	1	13
Business	82	15	1	2	6	18	-	-
Hand Loom Weaving	57	10	1	2	3	9	-	-
Service	22	4	-	-	1	3	1	13
Agriculture	12	2	-	-	3	9	-	-
Rickshaw-Van Pulling	10	2	-	-	-	-	-	-
Others	20	4	1	2	5	15	-	-
Unemployed, Old, House Wife	59	11	35	73	2	6	5	63
<b>Total</b>	<b>546</b>	<b>100</b>	<b>48</b>	<b>100</b>	<b>34</b>	<b>100</b>	<b>8</b>	<b>100</b>

88. **Earning Members in the Households:** Respectively, 95% and 98% of male members of MHH in the EMB and RBP areas earn money. The male income earners in the FHHs of EMB earn relatively less compared to that in the MHHs. All (100%) male members in the FHHs of RBP area work for money. The number of female earning members (20%) in the FHHs is higher than that (5%) in the MHHs of the EMB area. No female earning member was found in the FHHs of RBP area.

### 3.3.4 Level of Income of Affected Population

89. Irrespective of occupation, 87% and 25% of male and female headed AHs in the EMB area and all (100%) of the AHs in the RBP area earn BDT 15,000 and above per year (Table 3-11 and Table 3-12). The unemployed, old and housewives have no income. The majority of the female headed AHs in the EMB (69%) and RBP (63%) area did not mention their income. Only 10% of the male headed AHs in the EMB area did not mention their income. Note that in Bangladesh, 31.51% (2010 est.) of the population

<sup>16</sup>There is no SES data for HH Members in the RPP area.

lives below poverty line, defined as the poverty headcount ratio at \$1.25 a day (PPP) (% of population).<sup>17</sup>

**Table 3-11: Level of income of HH head per year for EMB**

Occupation	Embankment									
	MHH					FHH				
	<12,000	12,000-15,000	>15,000	No Response	Total	<12,000	12,000-15,000	>15,000	No Response	Total
Agricultural Labor	0.58	0.58	94.22	4.62	100	-	-	-	-	-
Daily Labor	4.42	4.42	91.15	-	100	10.00	10.00	60.00	20.00	100
Business	0.00	1.22	97.56	1.22	100	-	-	-	-	-
Hand Loom Weaving	3.51	-	92.98	3.51	100	-	-	100	-	100
Service	-	9.09	81.82	9.09	100	-	-	-	-	-
Agriculture	-	-	91.67	8.33	100	-	-	-	-	-
Rickshaw- Van Pulling	10.00	-	90.00	-	100	-	-	-	-	-
Others	-	-	100	-	100	-	-	50.00	50.00	100
Unemployed, Old, House Wife	1.69	-	28.81	69.49	100	2.86	-	11.43	85.71	100
<b>Total</b>	<b>1.82</b>	<b>1.64</b>	<b>86.50</b>	<b>10.04</b>	<b>100</b>	<b>4.17</b>	<b>2.08</b>	<b>25.00</b>	<b>68.75</b>	<b>100</b>

**Table 3-12: Level of income of HH head per year for RBP**

Occupation	RBP									
	MHH					FHH				
	<12,000	12,000-15,000	>15,000	No Response	Total	<12,000	12,000-15,000	>15,000	No Response	Total
Agricultural Labor	-	-	100	-	100	-	-	-	100	100
Daily Labor	-	-	100	-	100	-	-	-	100	100
Business	-	-	100	-	100	-	-	-	-	-
Hand Loom Weaving	-	-	100	-	100	-	-	-	-	-
Service	-	-	100	-	100	-	-	100	-	100
Agriculture	-	-	100	-	100	-	-	-	-	-
Others	-	-	100	-	100	-	-	-	-	-
Unemployed, Old, House Wife	-	-	100	-	100	-	-	40	60	100
<b>Total</b>	<b>-</b>	<b>-</b>	<b>100</b>	<b>-</b>	<b>100</b>	<b>-</b>	<b>-</b>	<b>38</b>	<b>63</b>	<b>100</b>

90. **Per capita income:** The per capita income per month is shown in Table 3-13. The per capita income of 18% and 35% of the male and female headed HHs in the EMB area and of 12% female headed HH in the RBP area are less than BDT 714, which is much lower than the poor income of the country (see section 3.2.5). Furthermore, it is assumed that a good portion of the HHs belong to the income group of BDT 714 – 1,429. The findings of Table 3-13 shows that the female headed households are more vulnerable compared to the male headed HHs. Irrespective of sex/gender, the HH who earn per capita BDT 1,429 per month are not vulnerable.

**Table 3-13: Total HHIncome per year by EMB and RBP Area**

AH Income/Year	Per Capita Income/Month	Embankment		RBP	
		MHH (%)	FHH (%)	MHH (%)	FHH (%)
1,000 – 60,000	20-714	18	35	-	12
60,000 – 120,000	714-1,429	55	44	56	25
>120,000	>1,429	25	15	44	63
No Response	-	2	6	-	-
<b>Total</b>	<b>-</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

<sup>17</sup>[http://www.indexmundi.com/bangladesh/population\\_below\\_poverty\\_line.html](http://www.indexmundi.com/bangladesh/population_below_poverty_line.html)

By this standard, the poverty line would be in terms of per capita annual income around US\$ 460, or roughly Tk 35,600. Obviously, especially because of the low response from FHHs, this data has limited utility but may be useful for income generation program monitoring if during the initial demand study the data can be refined.

### 3.3.5 Poverty Status

91. Per capita incomes per month of the poor at lower poverty level in rural and urban areas of Rajshahi Division are BDT 1,101.63 and BDT 1,215.21, respectively (BBS 2011, in HIES-2010). In this context, it is evident from the findings of Table 3-13 that more than 18% and 35% households of the embankment area and 12% households of the RBP area are under the poverty level.<sup>18</sup>

92. In terms of monthly expenditure, the per capita expenditures of 20%, 40% and 12%, 13% male and female headed households in the embankment and RBP area respectively are BDT 142 to 714, and some of households in both areas spend BDT 714 to 1,034 (Table 3-14). It needs mentioning here that the cut-off point of poor expenditure in rural area of Bangladesh is 1,034.77 taka. In this respect, it is assumed that a little less than a half of the households are poor, as the per capita expenditures of the poor at lower poverty level in rural and urban areas of Rajshahi Division are BDT 1,034.77 and BDT 1,074.33, respectively (BBS 2011, in HIES-2010).

**Table 3-14: Level of Expenditure among Affected Households**

HH Expenditure / Month	Per Capita Expenditure/Month	Embankment		RBP	
		MHH (%)	FHH (%)	MHH (%)	FHH (%)
1,000 – 5,000	142 - 714	20	40	12	13
5,000 – 10,000	714 - 1429	36	27	44	24
> 10,000	>1429	43	29	44	63
No value	-	1	4	-	-
Total	-	100	100	100	100

93. Furthermore, these assessments of poverty are buttressed by the findings of the self-assessed poverty status of the households (Table 3-15). The households assessed themselves as wealthy, medium and poor. According to them, there is no wealthy household in the RBP area including the FHH of embankment area. Only a few (2%) MHH are wealthy in the embankment area. About a half (50%) of the MHH both in embankment and RBP areas are poor, while 67% and 37% of the FHHs are poor in the embankment and RBP area, respectively.

**Table 3-15: Self-assessed Level of Poverty among Affected Households**

Level of Poverty	Embankment		RBP	
	MHH (%)	FHH (%)	MHH (%)	FHH (%)
Wealthy	2	0	0	0
Medium	48	33	50	63
Poor	49	67	50	37
No Response	1	0	0	0
Total	100	100	100	100

### 3.3.6 Gender Status

94. The census and socio-economic survey data shows that 54% and 46% respectively are the male and female population of the AHs in the affected area. The male literacy rate is 57% and female is 45%. The male income earners in the total 638 AHs of the affected area are 94% and the female earners are 6%. Besides, the higher number of female disabled members (8) of the household indicates that the male members (2) are healthier than the female in the AHs. It is evident from these results that women are more vulnerable compared to men in the society.

95. Like many other countries in the developing world, Bangladeshi women fare worse than men on most of the social indicators. During the course of the Project preparation and assessment, detailed Gender analysis was also undertaken to look into the current status and needs of the women in the Tranche-1 area and the potential impact on them. The gender status, impacts and issues have been specifically analyzed and documented in the Gender Action Plan (GAP).

<sup>18</sup>Hardcore Poor Household: Combined Household Income below 60,000 TK/year based on an average monthly income of 5,149 Tk/Household for the bottom 5 % of Households. Source: Household Income and Expenditure Survey 2010, Bangladesh Bureau of Statistics.

## 4 Impacts of the Tranche-1 Components (Embankment and RBP) in JRB-1

### 4.1 Introduction

96. The Tranche-1 impacts are based on the findings of: 1) a Census and 2) an Inventory of Losses (IOL) 100% sample survey; and 3) a Socioeconomic (SES) and 4) an Agricultural Plot Users random sample 20% survey, which were used for preparing a detailed budget.<sup>19</sup> This chapter only describes the impacts of the Tranche-1 Jamuna Right Bank's first Sub-Reach (JRB-1), located in Kaijuri Union of Shahjadpur Upazila of Sirajganj District. The components of the Sub-Reach JRB-1 are:

Proposed JRB-1 Interventions	KM	Ha
a) New Jamuna Embankment (with a 2 Km Old Embankment sub-section)	12.56	48
b) Rehabilitated Hurashagar/Baral Embankment	10.44	40
<b>Subtotal</b>	<b>23.00</b>	<b>88</b>
c) Riverbank Protection near the Old Embankment	1.00	1.8
d) Structures		4.2
<b>TOTAL</b>	<b>24.00</b>	<b>94</b>

97. Accordingly, this chapter focuses on the impacts the Tranche-1 JRB-1 main components, i.e., (i) New Jamuna and the Rehabilitated Hurashagar/Baral embankments and (ii) the Riverbank Protection near the Old Embankment. The impacts include the loss of land, structures, and trees.

98. Also in Tranche-1, there are three other proposed Riverbank Protection (RBP) interventions located on the Jamuna's left bank (JLB) but not covered in this chapter. Also, 4.21 ha of land will be acquired for the construction of structures (regulators).

99. The Left Bank's three RBPs will also be constructed in Tranche-1, but the changing morphology of Jamuna and Padma Rivers after two flood seasons before construction can start means that the configuration of the RBPs will be considerably different by the time of the FERMIP implementation. All IR impacts will be identified for the Left Bank's three RBPs, and sub project RPs will be drafted by the construction supervision consultant. Therefore, for budget purposes, the 1 Km unit costs of the Left Bank RBPs will be estimated from average costs of the JREMP & Jamuna Right Bank RBPs. Early in implementation, sub-project RPs will be drafted by the construction supervision consultant (CSC) for ADB's approval prior construction will commence, following the MRB's Resettlement Framework (RF).

Proposed JLB-1&2 Interventions	KM	Ha
• Chauhali RBP within the <i>Jamuna Left Bank</i> (JLB)-2 Sub-Reach	5	15
• Zafferganj RBP within JLB-2 Sub-Reach	2	6
• Harirampur RBP within <i>Padma Left Bank</i> (PLB)-1 Sub-Reach	7	21
<b>TOTAL</b>	<b>14</b>	<b>42</b>

<sup>19</sup>See: Chapters 3 and 4 for survey results; Annex VIII: *Technical Note for Resettlement Survey Methodology*; Annex XV: *Questionnaires adapted for iPad: 1) General Census; 2) Socio-economic (SES); 3) Inventory of Losses (IOL); and 4) Sample Agricultural Plot Users*; Annex XVI: RB-1 Tranche-1 March-May 2013 Census HH List; and Chapter 11 for the budget for land acquisition and resettlement costs. The surveys took more than twice the time estimated due to considerable political unrest leading to many *hartals* (strikes).

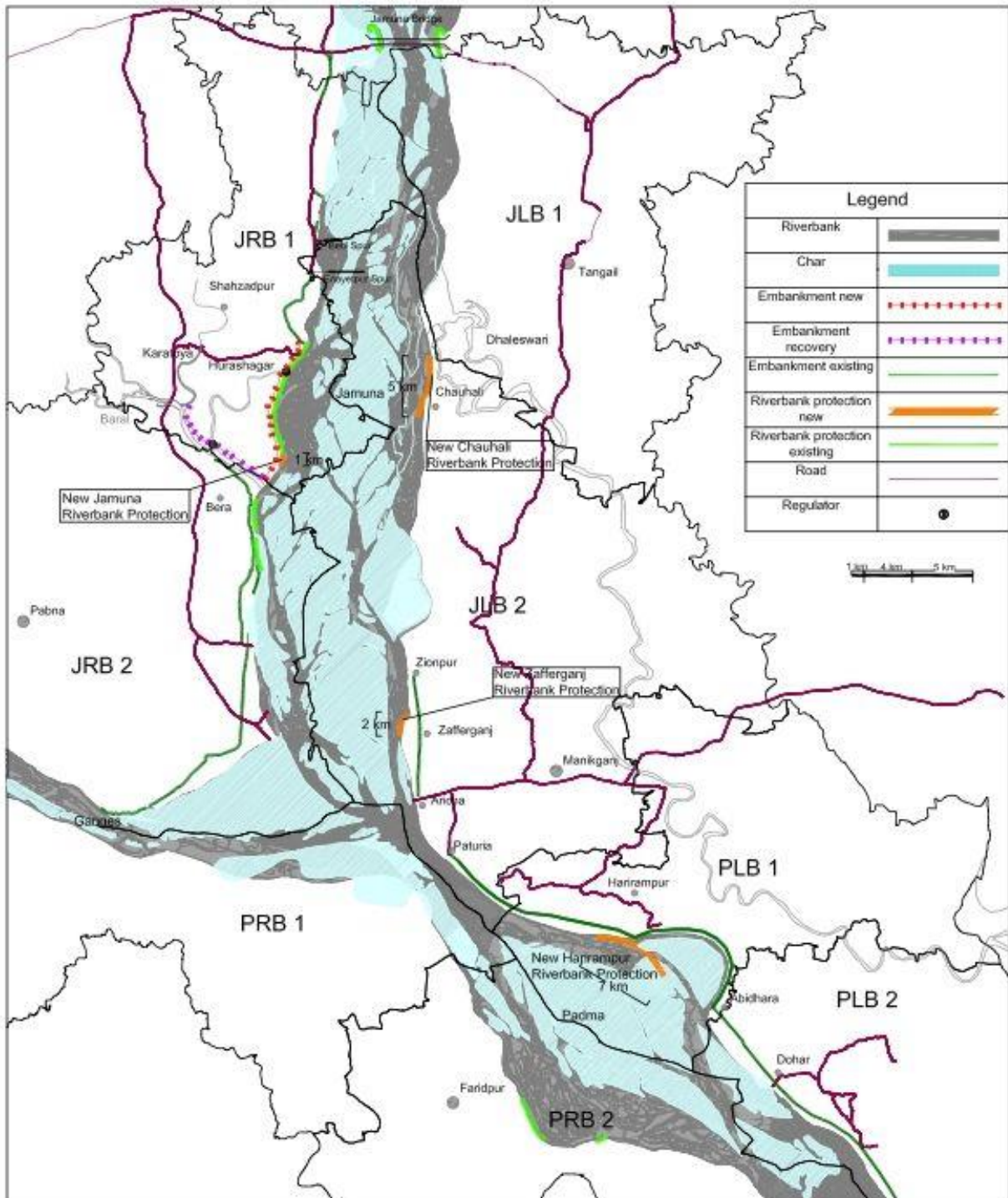


Figure 4-1: Proposed Tranche-1 Riverbank Protection Interventions

## 4.2 Embankment and Riverbank Protection Impacts

100. For the embankment (EMB) and riverbank protection (RBP) construction, a total of 94 ha of land will be acquired, which includes 88 ha for the EMB and 1.8 ha for the RBP construction and 4.2 ha for structures. On this land, there is a total of 1,184 affected households (AHs) - 1,142 on the EMB and 42 on the RBP. This includes an estimated 548 agricultural plot users on 78.58 ha of agricultural land. Out of these total number of AHs, 1,065 AHs are considered vulnerable (EMB: 1,047 and RBP: 18). The AHs include a total of 4,560 affected persons (APs), of which 2,449 are male and 2,111 are female. An estimated 4,393 APs are agricultural plot users, including roughly 2,350 males and 2,043 females.

101. The Area of the structures of the affected Households is 329,360 Ft<sup>2</sup> including 253,255 Ft<sup>2</sup> of residential and 15,619 Ft<sup>2</sup> of commercial structure. Out of the 1,284 residential structures, the biggest portion of 987 is Kutcha and 291 are thatched. Just six structures are Pucca (4) and Semi-pucca (2).

102. The construction affects a total of 96 commercial structures (Emb: 91 and RBP: 5) and 2 PCRs (2 mosques by the Embankment).

103. The Embankment and RBP construction also affects trees: Fruit-Trees: 3319; Timber-Trees: 2710; Groves: 65; Bananas 57 and Medicine: 43.

## 4.3 The Embankment Impacts

104. In the consequence of embankment construction, a total of 594 nonagricultural Households are affected. This includes homestead land of 503 (84.7%), AHs primarily within the new Jamuna embankment alignment, and commercial land of 91 (15.3%) Ahs. Some 548 AHs lose agricultural (cultivable) land (Table 4-1).

**Table 4-1: Type of Losses of the Embankment AHs**

CATEGORIES OF ACQUIRED FOR AH's LAND	AHS	NON-AGRI %	TOTAL %
<i>Homes tead Land</i>	503	84.7	--
<i>Commercial Land</i>	91	15.3	--
<b>AH's Non-Agricultural Land</b>	<b>594</b>	<b>100</b>	<b>52.0</b>
<b>AH's Agricultural Land</b>	<b>548</b>	<b>--</b>	<b>48.0</b>
<b>Total (Direct Impacts on AH's Land)</b>	<b>1,142</b>		<b>100</b>

105. Among the 91 affected commercial structures, there are 37 shops, which are located in a bazaar on the old embankment. This bazaar is on BWDB land and the shop owners do not own the land. The other commercial structures are mainly handloom factories (51). These are in the most cases located on the homestead land. There are also 2 poultry farms and 1 doctor's office (Table 4-2).

**Table 4-2: Acquired Commercial Structures**

Commercial Structure	Number	%
Shops	37	40.7
Handloom Factories	51	56
Poultry Farms	2	2.2
Doctor's Office	1	1.1
<b>Total</b>	<b>91</b>	<b>100</b>

106. Two PCRs will be impacted, the mosque at Gaudi Bari on the new Jamuna embankment alignment and mosque at Verakhola on the OE. The details of the consultations with the communities are presented in Table 4-2 below. There were no PCRs on the Hurashagar/Baral embankment, which is mostly agricultural land, with only around ten AHs (Table 4-3).



**Table 4-3: Details of Affected PCRs on the New Jamuna Embankment**

Affected PCR	Description of Issue	Points to Consider in Decision	Result of Discussion
Mosque at Ghudi Bari	The proposed alignment would affect a mosque in Ghudi Bari.	- Villagers want to rebuild the mosque - They own the land besides the existing mosque	Imam and villagers accept to shift the new mosque to the place besides the alignment
Mosque at Verakhola on the OE	The alignment has to follow the OE, so it is not possible to avoid the mosque	-Villagers agree to shift the mosque - New mosque should be close to the old one	The mosque will be shifted after consultation of the villagers

#### 4.4 The Riverbank Protection Impacts

107. In the Riverbank Protection area, dwelling land of 37(88.1%) and commercial land of 5 (11.9%) out of total 42 households are affected with their residential structures and commercial structures, respectively. The construction of the RBP does not affect any agricultural land (Table 4-4).

**Table 4-4: Type of Losses of the RBP AHs**

Types of Loss	AHs	NON-AGRI %
<i>Homes tead Land</i>	37	88.1
<i>Commercial Land</i>	5	11.9
<b><i>AH's Non-Agricultural Land</i></b>	<b>42</b>	<b>100</b>

108. Out of the 5 affected commercial Structures, 4 are handloom factories and 1 is a shop.

**Table 4-5: Affected Commercial Structures**

Commercial Structure	Number	%
Handloom Factories	4	80
Shops	1	20
<b>Total</b>	<b>5</b>	<b>100</b>

#### 4.5 Scope of Embankment Land Acquisition

109. The embankment component requires 99.754 Ha of land for its construction in Shahjadpur Upazila of Sirajganj District. Out of total 99.754 Ha of land, 11.69 Ha (11.72%) had already been acquired around 50 years ago, and the larger portion of land, 88.064 ha (88.36 %) will be needed to acquire. Table 4-6 shows details of the embankment land acquisition Table 4-8 shows current usage of the embankment and RBP land and Section 4.7 outlines the Embankment and RBP Induced Displacement. For the Embankment construction, a 45-50 m wide strip will be acquired. Out of 23 km total Embankment, 1.45 km are 50 m wide and the larger portion of 21.55 km is 45 m wide.

#### 4.6 Scope of RBP Land Acquisition

110. The RBP component requires 3 ha of land for its construction. Out of total 3 ha of land, 1.18 ha (39.3%) has already been acquired around 50 years ago, and the larger portion of land worth of 1.82 ha will be needed to acquire. Table 4-7 shows details of land acquisition. No agricultural land is affected in Shahjadpur Upazila under the RBP component. For the RBP construction, a 30 m wide strip of land above LWL will be acquired.

#### 4.6.1 Impact on Embankment and RBP Agricultural Land

111. On the land affected from the Embankment, 78.58 Ha are agricultural land which is used by 548 AHs. On the RBP alignment 42 AH live on the 3 ha to be acquired. The alignment for the RBP does not affect agricultural land. The distribution can be seen in Table 4-8.

**Table 4-6: Distribution of Embankment Affected Land in Ha**

#	Mauza	Needed	%	Acquired	%	To Be Acquired
0	Hat Panchil	0.0	0.00	0	0.00	0.00
1	Joypur	2.504	2.51	0	0.00	2.504
2	Gopalpur	0.895	0.90	0	0.00	0.895
3	Koijuri	2.633	2.64	0	0.00	2.633
4	Gudhibari	12.013	12.04	0	0.00	12.013
5	Vatpara	0.446	0.45	0	0.00	0.446
6	Jagtala	5.827	5.84	0	0.00	5.827
7	Kayanathia	3.315	3.32	0	0.00	3.315
8	Kashipur	5.202	5.21	0	0.00	5.202
9	Garjana	1.102	1.10	0	0.00	1.102
10	Gala	3.04	3.05	0	0.00	3.04
11	Benotia	9.12	9.14	1.18	10.09	7.94
12	Taratia	3.55	3.56	3.55	30.37	0.00
13	DortaMehi	3.02	3.03	2.56	21.90	0.46
14	Char Pechakola	0.267	0.27	0	0.00	0.267
15	Bera	7.21	7.23	0	0.00	7.21
16	DattaDarta	4.22	4.23	0	0.00	4.22
17	Barnia	3.02	3.03	0	0.00	3.02
18	Shantosha	4.47	4.48	0.5	4.28	3.97
19	Lochha	7.5	7.52	2.73	23.35	4.77
20	Chayra	14.57	14.60	1.17	10.01	13.4
21	Ramkharua	2.75	2.76	0	0.00	2.75
22	Selachapri	0.92	0.92	0	0.00	0.92
23	Dombaria	2.16	2.17	0	0.00	2.16
	<b>Total</b>	<b>99.754</b>	<b>100</b>	<b>11.69</b>	<b>100</b>	<b>88.064</b>

**Table 4-7: Distribution of RBP Affected Land in Ha**

Mouza	Needed	%	Already Acquired	%	To Be Acquired	Below LWL	Above LWL
Benotia	3	100	1.18	39.33	1.82	0	1.82

**Table 4-8: Usage of Affected Land on Embankment and RBP by Ha(including already acquired land)**

Usage	Ha	%	Total %
<b>Embankment</b>			
Agricultural Land	78.58	78.80	
Homes tead Land	21.01	21.00	
Commercial Land	0.16	00.20	
<b>Subtotal</b>	<b>99.75</b>	<b>100</b>	<b>95.2</b>
<b>RBP</b>			
Dwelling land	1.17	39.08	
Commercial land	0.01	0.27	
Agricultural land	0.00	0.00	
Other land (incl. under LWL)	1.82	60.65	
<b>Subtotal</b>	<b>3</b>	<b>100.</b>	<b>4.8</b>
<b>Total</b>	<b>102.75</b>		<b>100</b>

112. About the half of the affected agricultural plot user (49.1%) loses the complete plot to the project and all affected households lose more than 20% of the used land. The distribution of losses can be seen in Table 4-9 below. As the plot users claim that these plots are their single income source, all AHs will lose more than 10% of their income. Because of this, all affected agricultural plot user AHs(548) are considered vulnerable and eligible for the Income and Livelihood Restoration Program (ILRP).

**Table 4-9: Percentage of Agricultural Land Lost to Embankment**

Percentage of loss	Embankment	
	Household (No.)	Household (%)
up to 10%	0	0.0
11 to 20%	0	0.0
21 to 40%	37	6.7
41 to 59%	130	23.7
60 to 95%	112	20.3
100%	269	49.1
<b>Total</b>	<b>548</b>	<b>100</b>

113. The affected agricultural land is mostly (86.44%) owned by the user. The rest of the land is leased out by the owner. No *uthuli* or squatter has been found in the area. The areas (ft<sup>2</sup>) and ownership distribution can be seen in table 4-10 below. The survey showed that the plot user operate their own land, or lease it out, if it is too big for them to operate it by themselves.

**Table 4-10: Distribution of Agricultural Land by Ownership**

Ownership	Embankment			
	Household		Total Affected Area Ft <sup>2</sup>	Average Affected Area Ft <sup>2</sup>
	No.	%		
Own	474	86.44	7,808,046	153.099
Khas land	0	0.00	0	0
Leased	74	13.56	667,527	83.441
<i>Uthuli</i>	0	0.00	0	0
<b>Total</b>	<b>548</b>	<b>100.00</b>	<b>8,475,573</b>	<b>236.54</b>

114. The Embankment will affect 548 Households using agricultural plots. All of these households are male headed. More than half of the affected population of 4,393 persons is male (53.5%).

**Table 4-11: Gender of AH Heads on Embankments**

	Affected Household Heads		APs		
	MHH	FHH	Male	Female	Total
No.	548	0	2,350	2,043	4,393
%	100	0	53.5	46.5	100

115. For the affected agricultural plot user, a survey on 20% of 109 identified agricultural clusters was conducted, which included a total of 59 households. Based on this survey, the average plot size was determined and compared to the total of agricultural land, which led to 548 affected households on the total embankment. The Estimation is shown in table 4-12 below.

**Table 4-12: Estimating Number of Plot User AHs, based on 20 Percent Sample**

Land on Alignment (Total/Ha)	99.754
Residential Land on Alignment (Total/Ha)	21.321
Agricultural Land on Alignment (Total/Ha)	78.433
Average Plot Size on Alignment (Based On Survey/Ha))	0.143
<b>Number of User AHs (Agri. Land/Av. Plot size)</b>	<b>548</b>

## 4.7 Embankment and RBP Induced Displacement

116. In the embankment area, 594 AHs use, on average 11.27 decimal of homestead land. The average size of affected homestead land is 9.60 decimal; 1.67 decimal of land will be left after acquisition of land, which will not be suitable for construction of homestead. Out of 594 AHs, 522 (88%) will lose all of their homestead land. Details of loss of land are presented in the Table 4-7. All of the total 594 households have to displace, as they are losing their physical structures (both residential and commercial). See Table 4-13.

**Table 4-13: Percentage of Homestead Land Lost to EMB and RBP**

Percentage of Loss	Embankment		RBP	
	AH	%	AH	%
up to 10%	7	1	2	5
11 to 20%	5	1	1	2
21 to 40%	8	1	2	5
41 to 59%	28	5	8	19
60 to 95%	24	4	0	0
100%	522	88	29	69
<b>Total</b>	<b>594</b>	<b>100</b>	<b>42</b>	<b>100</b>

### 4.7.1 Gender Disaggregated data of the Displaced Households

117. There are 546 (92.0%) male headed HHs (MHH) and 48 (8.0%) female headed HH (FHH) in the EMB area. In total, of the 594 AHs members, 2,255 (53.7%) are male and 1,945 (46.3%) are female, including the HH heads. Table 4-8 shows the gender profile of the AHs of both EMB and RBP areas.

118. Physically, 594 AHs will be displaced in the EMB area. Some 471 (79.0%), did not response regarding their preferred relocation. Only 114 (19.1%) AHs are willing to relocate with their neighbors (15.9%) and alone (3.2%) but with the support from FERMIP. There are 34 (81.0%) MHH and 8 (9.0%) FHH in the RBP area. The 42 AHs have 194 (53.9%) male and 166 (46.1%) female members, including the HH heads. The AHs in the RBP area did not express their opinion regarding their relocation (Table 4-14).

**Table 4-14: Component wise Gender Profile of the Affected Population**

Component	Affected Household Heads		APs		
	MHH	FHH	Male	Female	Total
Embankment	546	48	2,255	1,945	4,200
RBP	34	8	194	166	360
<b>Total</b>	<b>580</b>	<b>56</b>	<b>2,449</b>	<b>2,111</b>	<b>4,560</b>
(%)	91.9	8.1	53.7	46.3	100

### 4.7.2 Type of Affected Structures

119. The affected structures on the alignment are houses (residential), kitchens, stables, toilets, tube wells, business structures and physical cultural resources (PCRs). Quantity and mean floor area of the affected structures in the EMB and RBP areas by households are presented in Table 4-15 below. Most of the AHs (503) just lose homestead land, 43 lose commercial land and some 48 lose both, commercial and homestead land, as both structures are on the same plot. The secondary structures as kitchen, stables, toilets and tube wells are on the homestead or commercial land.



### 4.7.3 Land Tenancy and Use Right of Structures

120. About a little less than a half (42.8%) of the AHs have homestead land; and the remaining 57.2% of the AHs have no land; either they live on khas land (34.4% as squatters) or leased-in land (29.9% as lessee) or live free of cost on others land as *uthuli* (2.7%) in the EMB area. In the RBP area, 28 (71.79%) households have land; they own on average 375.04 ft<sup>2</sup> of land. On the other hand, 11 (28.21%) have no land; they live on the khas land. Average size of their homestead land is 359.09 ft<sup>2</sup>. Of 551 AH having homestead land, 110 lease their land (20%). Ownership of land of affected structures by AHs is presented in the Table 4-16 below.

**Table 4-15: Component Wise Impact on Structures**

Component	Structures	Quantity	Total Floor Area (Ft <sup>2</sup> )	Mean Floor Area (Ft <sup>2</sup> )	AHs
EMB	Residential	1,284	235,205	183.18	551
	Kitchen	687	20,799	30.28	524
	Stable	183	10,281	56.18	174
	Toilet	620	14,169	22.85	538
	Business Structure	84	26,635	113.52	91
	Tube Well	530	0	0	490
	Other (PCR)	2	0	0	0
	<b>Subtotal</b>		<b>307,142</b>	--	
RBP	Residential	91	18,050	451.25	39
	Kitchen	36	1,120	46.67	24
	Stable	16	890	55.62	16
	Toilet	36	708	21.45	33
	<b>Business Structure</b>	<b>6</b>	<b>1,450</b>	<b>241.67</b>	<b>5</b>
	Tube well	26	0	0	26
	Other	0	0	0	0
	<b>Subtotal</b>		<b>22,218</b>		
<b>TOTAL</b>			<b>329,360</b>		

**Table 4-16: Distribution of Land of the Embankment and RBP Affected Homestead Structures by Ownership**

Ownership	Embankment				RBP			
	Household		Total Affected Area Ft <sup>2</sup>	Average Affected Area Ft <sup>2</sup>	Household <sup>20</sup>		Total Affected Area Ft <sup>2</sup>	Average Affected Area Ft <sup>2</sup>
	No.	%			No.	%		
Own	236	42.8	113,850	482.42	28	71.7	10,501	375.04
Khas land	190	34.4	88,150	463.95	11	28.3	3,950	359.09
Leased	110	19.9	31,692	288.11	0	0	0	0.00
<i>Uthuli</i>	15	2.7	2,063	137.53	0	0	0	0.00
<b>Total</b>	<b>551</b>	<b>100.00</b>	<b>235,755</b>	<b>427.87</b>	<b>39</b>	<b>100</b>	<b>14,451</b>	<b>453.63</b>

121. From among the affected AHs in the embankment area 503 are impacted for loss of residential structures, 48 for both residential and commercial structures, and 43 for commercial structures. Community establishments are also affected; They are mosques (2) the Imam and villagers at Gudhibari village of Koijuri union of Shahjadpur Upazila and the villagers at Verakhola accept to shift the new mosque to the place beside the alignment.

122. In the RBP area, there is no PCR on the alignment. Only the residential and commercial structures are affected. Component wise distribution of the affected structures is presented in Table 4-12.

<sup>20</sup> Data for three households not obtained.

#### 4.7.4 Construction Type of Affected Structures, by Component

123. The available census data shows construction type of residential and commercial structures. The construction types of residential and commercial structures are pucca, semi-pucca, kutcha and thatched. Most of the structures are kutcha and thatched (Table 4-17)<sup>21</sup>. There are 4 Pucca, 2 Semi-Pucca, 987 Kutcha and 291 Thatched Structures in the Embankment and RBP area.

**Table 4-17: Component-Wise Distribution Structures by Construction Type**

Type of Residential Structure	Structures	%	Area(Total)	Area(Average)
Pucca	4	0.3	750	187.50
Semi-Pucca	2	0.1	400	200.00
Kutcha	987	76.9	190,370	192.88
Thatched	291	22.7	43,685	150.12
<b>Total</b>	<b>1,284</b>	<b>100</b>	<b>235,205</b>	<b>183.18</b>

#### 4.8 Affected Trees

124. Fruit, timber and medicinal trees are affected in embankment area. In the fruit trees, 255, 55 and 2,898 are seedlings, non-fruit bearing and non-fruit bearing, respectively. Likewise, 545 and 2,137 are seedlings and grown up timber trees, respectively. In total 819, 55, and 5,169 are respectively seedlings, non-fruit bearing and non-fruit bearing trees. In the RBP area, all (151) trees are matured. Details of the trees are presented in Table 4-18.

**Table 4-18: Number of Trees Affected by Component**

Name of Trees	EMB			RBP		
	Seedlings	Non-Fruit Bearing	Fruit-Bearing/Grown Up	Seedlings	Non-Fruit Bearing	Fruit-Bearing/Grown Up
<b>4.8.1.1.1.1.1.1 Fruit Trees</b>						
Mango	154	33	1,752	-	-	82
Guava	33	6	452	-	-	9
Jackfruit	56	6	359	-	-	16
Baroi	2	1	129			0
Coconut	3	5	76			0
Jam	2	2	47	-	-	2
Litchi	2	2	25			0
Katbel	0	0	13			0
Jalpai	0	0	12			0
Amra	1	0	8	-	-	1
Palm (tal)	0	0	8			0
Atta	0	0	6	-	-	1
Tamarind	1	0	5			0
Kamranga	0	0	3			0
Amloki	0	0	1			0
Chabeda	0	0	1			0
Jamrul	0	0	1			0
Betel-nut	1	0	0			0
<b>Sub-Total</b>	<b>255</b>	<b>55</b>	<b>2,898</b>			<b>111</b>
<b>Timber/Fuel Wood</b>						
Ukaliftas	532		2,050	-	-	26
Kadom	1		41	-	-	1
Mahogoni	6		36			0

<sup>21</sup>The pucca structures are made of concrete/cemented floor + brick wall + concrete roof; semi-pucca of concrete/cemented floor + brick wall + tin (corrugated iron sheet) roof, kutcha of earthen floor, CI sheet/bamboo wall and CI sheet roof, and thatched structures are made of earthen floor + bamboo or straw (thatching grass) wall and straw roof in the embankment and RBP areas.

Name of Trees	EMB			RBP		
	Seedlings	Non-Fruit Bearing	Fruit-Bearing/Grown Up	Seedlings	Non-Fruit Bearing	Fruit-Bearing/Grown Up
Koroi	6		7	-	-	1
Shimul	0		3			0
<b>Sub-Total</b>	<b>545</b>	<b>0</b>	<b>2,137</b>			<b>28</b>
<b>Groves</b>						
Banana	2	0	55			0
Bamboo	0	0	55	-	-	10
<b>Sub-Total</b>	<b>2</b>	<b>0</b>	<b>110</b>			<b>10</b>
<b>Medicinal</b>						
Nim	17	0	24	-	-	2
<b>Sub-Total</b>	<b>17</b>	<b>0</b>	<b>24</b>			<b>2</b>
<b>Grand Total</b>	<b>819</b>	<b>55</b>	<b>5,169</b>			<b>151</b>

## 4.9 Impact on Wage Earners

125. The wage earners are working in the handloom factories, shops, and other working places. The affected commercial AHs (91) engage 447 (95.5%) male and 63 female workers in their commercial establishments (Table 4-19) in the EMB area. In the RBP area only male wage earners are employed in the handloom factories by the five (5) affected commercial AHs.

**Table 4-19: Component-wise Project Impact on Wage Earners**

Components	AHs	%	Male Wage Earners	%	Female Wage Earners	%	Total Earners	%
EMB	91	94.8	447	87.6	63	12.4	510	100
RBP	5	5.2	21	100.0	0	0.0	21	100
<b>Total</b>	<b>96</b>	<b>100</b>	<b>468</b>	<b>88.1</b>	<b>63</b>	<b>11.9</b>	<b>531</b>	<b>100</b>

## 4.10 Vulnerability Status of Affected Households

126. Certain groups of population by virtue of their socio-economic realities are considered socially vulnerable and thus in need of special consideration so that they can benefit from the development activities project. These groups include:

- (a) Hard core poor households<sup>22</sup>
- (b) Tribal/Indigenous Peoples households
- (c) Female-headed households (FHH) and
- (e) Disabled households

127. The above groups have been recognized as “vulnerable groups” under the Project. In addition to the above groups taking into account the severity of impact the households losing more than 10% of their total income as a result of the Project impacts, have also been included in the list of “vulnerable households”.

128. It is also worthwhile to note that the studies and surveys did not bring forth the presence of Indigenous groups in the Project area. As a result, no Indigenous People would be affected as a result of the Project.

129. The vulnerable affected households by vulnerable category in the embankment and RBP areas are shown in Table 4-20 below.

**Table 4-20: Vulnerable Affected Households by Component**

<sup>22</sup> Hardcore Poor Household: Combined Household Income below 60,000 TK/year based on an average monthly income of 5,149 Tk/Household for the bottom 5 % of Households. Source: Household Income and Expenditure Survey 2010; Bangladesh Bureau of Statistics.

Vulnerable Category	Vulnerable Households Affected (No.)				Total	
	EMB		RBP		No.	%
	No.	%	No.	%		
FHH	48	4.5	8	44	56	5.3
Elderly MHH	120	11.5	9	50	129	12.0
AH with Disabled Members	9	0.9	0	0	9	0.9
Hardcore Poor MHH	322	30.8	1	6	323	30.3
<i>Subtotal:</i>	499		18		517	
HH losing >10% of Their Income Due to Loss of Agri-Land	548	52.3	0	0	548	51.5
<b>Total</b>	<b>1,047</b>	<b>100</b>	<b>18</b>	<b>100</b>	<b>1,065</b>	<b>100</b>



## 5 Consultation, Disclosure and Participation

### 5.1 Consultation Process

130. Consultation and participation is a process through which stakeholders influence and share control over development initiatives, and the decisions and resources that affect them. It is a two way process where the executing agencies, policy makers, beneficiaries and affected persons discuss and share their concerns in a project process. The ADB's safeguard policies give high priority on public consultation and participation to enhance the community voice and assure incorporation of community's views in design and implementation of a socially and environmentally compliant project. The Government of Bangladesh (GOB) also has some acts and policies in line with this issue.

131. In keeping with the same, attempts have been made both in Project design and RP preparation to encourage consultation and participation of the affected people and communities and incorporate their views, needs and aspirations into the Project components. The community was consulted during the public consultation meetings, which were organized at various stages. The objectives of all these consultations, has been to maximize benefits and minimize adverse social effects on the affected people, as far as possible, in keeping with the ADB's Safeguard Policy Statement (SPS) and national legislation.

132. The focus of all these public discussions and meetings was to inform the communities and population about the positive as well as negative impacts of the Project and seek their views, suggestions and inputs on the Project. Suggested activities are listed below. Suggested follow up monitoring and evaluation are found in Section 13.<sup>23</sup> For more information, see 10.2.1.12 Grievance Redress Committee (GRC).

133. Consultation Activities

#### Consultation, and Grievance Redress Participation Activities

- Identify project stakeholders.
- Establish mechanisms for stakeholder participation in planning, management, monitoring, and evaluation.
- Identify local institutions or organizations to support people affected.
- Review potential role of nongovernment organizations (NGOs) and community-based organizations (CBOs).
- Establish procedures for redress of grievances by people affected

Important methods for engendering a participatory approach in resettlement

management are:

- information campaigns, for example, using media, posters, or information leaflets
- public meetings
- focus groups involving key stakeholders, for example, local business or village leaders, women, the poor, people experiencing particular kinds of losses;
- group formation and development, providing a forum to support identified AP groups, during the process of planning and implementation
- interviews with people affected on a household basis to seek their agreement on their specific entitlements
- formation of various committees of stakeholder groups for planning, implementation, and monitoring purposes
- development of mechanisms for grievance redress, and publicizing these mechanisms widely

---

<sup>23</sup> ADB. Handbook on Resettlement: A Guide to Good Practice. December 1998.

<http://www.adb.org/documents/handbook-resettlement-guide-good-practice>

#### Checklist: Consultation and Participation

- Identify and involve all stakeholders, especially people affected, in the consultative and participative process.
- Develop a participatory strategy for project planning, implementation, and M&E.
- List details required for information campaigns and for information dissemination, and develop procedures for APs to negotiate their entitlements.
- Involve stakeholders in decision-making at all stages of project implementation.
- Establish a time line to complete activities such as an information campaign, compensation types and levels, entitlements, and relocation sites and schedules.
- Establish a participatory compensation and resettlement management strategy.
- Use and support CBOs, and be sensitive to issues concerning community consultation and participation.
- Establish procedures for grievance redress.

## 5.2 Project Stakeholders

### 5.2.1 Definition

134. A stakeholder is any person, group or institution that has an interest in an activity, plan or program. This includes intended beneficiaries and intermediaries, winners and losers, and those involved or excluded from decision-making processes. Stakeholders are those ultimately affected, either positively (beneficiaries) or negatively (for example, those involuntarily displaced). Among stakeholders of the FERMIP are the beneficiaries (residents along the Jamuna River) of the south-western, north-central and central region of Bangladesh and the affected persons due to involuntary displacement and resettlement in the project area. Residents of upstream char lands from the BRE location will also experience some impact of the project. Others are the executing agency, line ministries, financing institutions, consultants, construction contractors, suppliers and service providers, the project owner (BWDB), deputy commissioners and their supporting agencies, local governments, design and management consultants, local level NGOs and implementing NGOs, qualified and experienced external monitors, construction contractors, suppliers, and health and security services of the GOB to the project.

135. BWDB will acquire land through the LA office of Sirajganj District. The local government representatives will be involved in the process of implementation of RP to identify and advocate for the affected persons. The local NGOs working in the area will also be instrumental in RP implementation.

### 5.2.2 Stakeholders' Attitudes towards the Project

136. As a major infrastructure project, the FERMIP will have several impacts of varying significance. Despite those impacts, the affected households and communities were seen to have very positive attitudes to the Project. The communities recognized the benefits of the Project in terms of improved security from river erosion and flooding, increased value of residual land, protection against erosion providing opportunities for new businesses, employment and local development, resettlement in properly designed sites with civic amenities, and marketing development. The affected households were of the view that they would have a greatly improved living environment at the resettlement sites with the availability of extensive civic amenities and social infrastructure. Notably, poor and highly vulnerable households who had earlier no secured tenure would, for the first time be provided with titled land (housing plots), economic stability and improved quality of life at the resettlement villages.

**Note, from FGDs below (and in Annexure IX):**

---

#### Perceptions Regarding the Project

***For local people, there is no alternative to this project for sustaining human settlements in this locality.*** Local people demanded rapid implementation of this project before monsoon to protect the communication network, social-educational-religious institutions, household assets, infrastructures, cultivable lands, cottage industry (e.g. loom industry) from being eroded. They believed that the local people will always help in implementing this project.

---

### 5.2.3 Consultation Process

137. Although the consultative process in preparing a resettlement plan is both mandated and critical, the situation under FERMIP demonstrates the usefulness of continuity in stakeholder communication through the several phases of project development. The public consultation process entailed clearly explaining the project and its impacts, in a consistent manner, to the community through the many technical assessments. This approach was applied in the development of the RP and the responsiveness of the communities was well reflected in their strong support for the Project, which fully considered their concerns in setting out options that would be acceptable to them.

### 5.2.4 Public Consultation Meetings (PCMs)

138. The public consultation process in the project area began in 2012-2013, as part of the first pre-feasibility study. Public Consultation Meetings (PCMs) and Focus Group Discussions (FGD) provided the affected households opportunities to express their concerns about land acquisition, compensation, and resettlement. The consultation process will be further intensified during the detailed design period through formal and informal meetings, village level workshops, and disclosure of project impacts to the affected households and communities. This chapter presents a summary and overview of the consultations held over the project preparation period and detailed Design. See Table 5-2 for a list of PCMs held in the Tranch-1 area.

**Table 5-1: Summary of Public Consultation Meetings (PCMs) held under ADB PPTA Study(Tranch-1 Area)**

SL. No.	Location of Discussion	Date of Discussion	Duration of Discussion	No. of Participants		Issues of Discussion
				Male	Female	
1.	Jaforganj Bazaar, Shibaloy, Manikganj	13.02.2013	1.45 hrs	7	0	People's Perception And Attitude Relocation Issues Mode Of Compensation Payment Income Restoration
2.	Abhidhara Mouza, Dhulishara Union, Harirampur, Manikganj	14.02.2013	2.00 hrs	10	0	
3.	Charkatari Mouza, Charkatari Union, Daulatpur, Manikganj	15.02.2013	2.15 hrs	12	2	
4.	Aguria Mouza, Rajapur, Belkuchi, Sirajganj	16.02.2013	2.00 hrs	11	3	
5.	Koijuri Bazar, Koijuri Union, Shahjadpur, Sirajganj	17.02.2013	1.45 hrs	9	0	



PCM at Chauhali Upazila, Sirajganj



PCM at Harirampur Upazila, Manikganj



PCM at Shahjadpur Upazila, Sirajganj



PCM at Shibalaya Upazila, Manikganj

139. **Issues discussed included:** Key Problems in the Area; People's perception and attitude; Relocation issues; Mode of compensation payment; and Income restoration. Summaries of discussions are below. See Annexure IX for fuller coverage of the PCMs.

Key Problems of the Area	FERMIP Actions, if Any
According to the local people, riverbank erosion is the key problem in the study villages. For example, around 15 villages were eroded in Harirampur due to riverbank erosion. The villages are: Shekla, Vabaninagar, Panchtara, Jania Juban, Neelgram, Choiani, Dhulsunra, Kulukanda, Alinagar, Golabari, Khamarhati, Bakihati, LangolAla, Boali, and Bokshirtek. Moreover, approximately 5,000 families in Dhulsunra union of this upazila were adversely affected, directly or indirectly, due to riverbank erosion. Among those, 2,000 families were totally devastated. At present, these families are living on other people's land or on road as they have lost their homesteads and cultivable lands. Another serious problem is flooding. Every year enormous areas of homesteads, cultivable land and educational institutions are eroded due to riverbank erosion and flooding. During monsoon, all riverside villages get inundated and the settlements become unsuitable for living. Therefore, people take shelter in adjacent roads and relatives' houses until the flood water drains out.	FERMIP will mitigate river erosion if implemented
Due to the loss of massive areas of crop land, the people, especially marginal farmers have to change their profession frequently to compensate for the loss of their primary agro-based occupation. For example, in Charkatari of Daulatpur, most of the affected landowners resettled, temporarily or permanently, in the districts of Dhaka, Sylhet, Rajshahi, Gazipur etc. They have become engaged in day labor, rickshaw/van pulling, garments etc. in their new locations. In Aguria also, riverbank erosion has diverted farmers to the loom industry, which is a new area of occupation for which they lack required skill and financial capital.  In Abidhara village of Harirampur, there used to be 20 families of approximately 100 nomadic people. Due to riverbank erosion they have lost their homestead land and are now residing elsewhere. Many of them have failed to continue their traditional occupation and now are compelled to change their profession to earn a livelihood.  The change is also evident in Jaforganj of Shibalaya. Some people were employed in goods transportation as the village has a large market and a favorable navigation route. However, this occupation is now threatened by riverbank erosion. People, previously employed with this occupation, are now becoming engaged in new types of work.	LD-NGO will survey for available skill sets during a demand study
Inundation by the Jamuna River damages the crops of adjacent villages due to the absence of any riverside embankment. Moreover, sedimentation in the croplands induced by river flood also reduces soil fertility.	
Frequent riverbank erosion is destroying communication and transportation facilities. For example, the existing paved road in Aguria of Belkuchi, which is linked to the town, is highly vulnerable to riverbank erosion. Therefore, government, non-government and donor agencies are losing interest in infrastructural development, which in turn, is hampering the development potentiality of this locality. It is becoming impossible to initiate development plans and programs in the affected villages. Even the government is being compelled to withdraw existing facilities, such as electricity, from the area. The severe erosion proneness	



hampers – and in some cases delays – government, private, NGO and other development activities in this village.	
Frequent riverbank erosion always stands in the way of communication or other infrastructural development. Therefore, people use traditional means of transportation which is a waste of money and time. The weak communication system in turn hampers the economic activities in this locality.	
Lack of available employment and good communication network contributes to the increasing unemployment in this locality. For example, in Charkatari of Daulatpur, the Jaforganj market has been eroding over the years. This is hampering employment opportunities.	
Local people are deprived of the access to different service-facilities (including education, health, electricity etc.) as riverbank erosion has totally damaged the communication system including road networks. For example, no health service provider has taken up permanent residence in do not live in Charkatari of Daulatpur as the locality suffers from poor communication, education and other civic facilities. Although there is a union sub-center in Charkatari union, no service provider and treatment equipment can be found in this health center.  In Abidhara of Harirampur, the traditional Doshrar Haat, the Babubari High School, and the Ibrahimpur School had to be rebuilt twice due to riverbank erosion. These institutions are once again adversely affected by riverbank erosion.  In Jaforganj of Shibalaya, the inhabitants previously enjoyed electricity facility. However, there is no electricity connection in this village now.  During monsoon, flooding caused by the Padma River hastens inundation in this area. Therefore, the communication system and employment sectors are disrupted. Moreover, children cannot go to school during monsoon and thus the literacy rate is decreasing.	
The social status of erosion victims is becoming worse. Some landowners, who used to enjoy a high social status earlier, have become landless due to riverbank erosion and, therefore, socio-economically poorer.	
In Jaforganj of Shibalaya, land accretion occurs on one side of the river as the other side erodes. The encroachment tendency over these newly formed lands instigates factional politics and, hence, prompts criminal activities in the locality. Actual farmers fail to claim ownership of land, whereas influential people illegally encroach into these chars.	
<b><i>For local people, there is no alternative to this project for sustaining human settlements in this locality.</i></b> Local people demanded rapid implementation of this project before monsoon to protect the communication network, social-educational-religious institutions, household assets, infrastructures, cultivable lands, cottage industry (e.g. loom industry) from being eroded. They believed that the local people will always help in implementing this project.	FERMIP will mitigate river erosion if implemented

Resettlement Issues	FERMIP Actions, if Any
The authority has to acquire land to build embankments and other structures for the protection of the riverbank. Therefore compensation to the affected landowners would be necessary.	This will be done
An enormous number of farmers have lost their land due to riverbank erosion and are now maintaining their livelihoods through capture fisheries. Therefore, land acquisition may negatively impact employment and occupation.	The RP will include Income and Livelihood Restoration Program (ILRP), including support for pond and capture fishery
At present, there are almost no social and civic services and facilities in the affected areas, but local people are hopeful that the civic facilities will be improved in the resettled areas. For example, in Abidhara of Harirampur, education, health and other civic facilities are almost absent in Dhulsunra and	Planned Resettlement Villages will be in close proximity, with protection from new RBP. Livelihood Development NGO

Resettlement Issues	FERMIP Actions, if Any
other neighboring areas because of weak communication facilities. Local people have to travel to Dhaka for accessing health facilities which is too much time consuming and costly. The people of the villages, who preferred resettlement, are now enjoying these civic facilities. Moreover, market facilities are not satisfactory in this union due to riverbank erosion and flooding. Although there is a rural market in this locality, it is too far from the urban area and not all necessary commodities are available here. The inhabitants will get market and other facilities if they are resettled in their villages of preference. However, there may be some exceptions, for example, in Charkatari of Daulatpur people who will be resettled in the charland of Chauhali might be deprived of education, health, communication, market facilities etc. Also, the present state of education and health facilities in Aguria of Belkuchi is satisfactory.	will lobby for more civic and social services, as well as designing and implementing the ILRP.
Local people are able to travel only by motorcycle van as the communication system does not support any other vehicle. People usually travel to the upazila and zila headquarters by motorcycle. On the other hand, vans, rickshaws, auto-bikes and minibuses are available in the villages they preferred for resettlement. The traditional communication system is used as necessary in Aguria of Belkuchi depending on seasonality, age, sex, income etc. For example, people use waterways to receive treatment and education facilities during monsoon. On the other hand, roadway is the sole transportation medium during dry season. Those who live inside the <i>chars</i> use boats for transportation to the mainland.	The new and renovated EMBs will include motorable roads on a berm and rickshaw/emergency access on top of the crest. Social forestry and fodder grass on the EMB will be included in the SAP and hopefully participants/beneficiaries in these will resist new encroachers weakening the integrity of the EMB structures
People from the study villages and surrounding areas celebrate different social, cultural and religious activities communally. This indicates that they live in harmony. There is no issue of conflict among the people. Concerning the building of houses in the relocation area, there is no possibility of conflict and it will not create any obstruction in celebrating social and other rituals. The exception is Jaforganj of Shibalaya, where factional conflicts are observed in relation to encroachment into newly accreted charlands.	Resettlement Villages will be in close proximity of the EMB as far as possible
To implement this project the authority has to acquire land and therefore, compensation to affected landowners would be necessary. In this regard, the people were of the opinion that the authority should give cash money through the zila parishad/union parishad/local banks to those who have the ability to re-purchase land and give land in return of land to those who cannot afford it as the compensation amount would not be enough to purchase land in villages where they might become resettled. Moreover, special attention should be given to the selection of deserving landowners.	The land acquisition will be done through the DCand compensation under the law (CCL) and enhanced by FERMIP to provide Replacement Cost (RC).  FERMIP will provide an assortment of supportive grants as per the RP Entitlement Matrix. The RP-INGO will be responsible for public education and executing the grant program.
Agriculture, trade, fishery, day labor etc. are the main sources of income in the erosion affected areas. Moreover, people generate livelihood from fishery, livestock rearing, loom, rice mill, mustard oil processing, business, cottage industry, brickfield, transportation, service etc.	The <i>Chain Value Study</i> of April 2013 made a thorough analysis of local livelihoods and has been integrated into the RP's ILRP
Local people would be able to continue in their traditional occupations in the resettled locations. Moreover, the resettlement will add a new dimension to their employment because there are much more income sources in the relocation places compared to the existing locality. For example, in Charkatari of Daulatpur, agriculture is the key source of income and, therefore, it will be possible to sustain agriculture as the primary source of income after the resettlement.	Covered in the ILRP

Resettlement Issues	FERMIP Actions, if Any
There exist, more or less, different income sources (for example, agriculture, trade, service, cottage industry etc.) in places where the affected people will possible be resettled. Therefore, there is a potential for the generation of new employment in locations where affected people will be resettled. This, in turn, will instigate competition over wage, business etc. If new employment generation is possible, all the evicted people will be employed.	Covered in the ILRP and will be updated through a demand study
<p>A great portion of people is unemployed because of the low literacy rate and limited scope of work in the area. Therefore, if skill development training could be arranged, it would be possible to generate employment for existing unemployed people. Although it was not possible to estimate the exact number of people requiring skill development training, the local people felt that everyone who is able to work should receive the training. <i>They stressed the need for training in loom work, bamboo made handicraft, farming, cottage industry, livestock rearing, weaving activities for women etc. using modern technology.</i></p> <p>For example, most of the people in Aguria of Belkuchi and Abidhara of Harirampur directly or indirectly, are engaged in loom work and the traditional rice mill located in Abidhara mauza. Therefore, skilled development training on these activities would extend the scope of the above-mentioned industries in the locality. This development will positively impact the income and employment sector. In these two villages, the loom workers/laborers outnumber other occupational laborers as loom work is the most prevalent occupation here. In loom work, people are compelled to work for very low wage; for example, the male laborer gets 50 taka for weaving one <i>lungi</i> and the female laborer gets 100 taka for weaving from 8 am to 5 pm a day. The underlying reason is that cultivable lands are eroded usually by the river and, therefore, there is no alternative employment</p>	Covered in the ILRP and will be updated through a demand study
According to the local people, instead of occupation-based training the relocated people should be given skill and capacity developed training.	Covered in the ILRP and will be updated through a demand study
The resettlement will result in more unemployed people which will impact the employment sector. People will have to compete to secure employment, which will further increase the need for more income options. The people could not clearly explain how many people would require new employment after resettlement, but they felt that most of the people will have income options in the relocated areas.	Covered in the ILRP and will be updated through a demand study

### 5.2.5 Focus Group Discussions (FGDs)

140. Table 5-2 summarizes the FGDs held in the Tranche-1 area. More details about the issues and concerns raised by local people are found in Annexure IX. The primary focus of FGDs were gender issues, meeting with small groups of women and during setting out the RoW alignment minimizing land acquisition and avoiding physical cultural resources (PCR).

**Table 5-2: Summary of Focus Group Discussions (FGDs) held under ADB PPTA Study (Tranch-1 Area)**

SL. No.	Location of Discussion	Date of Discussion	No. of Participants	
			Male	Female
1	JMREMP - PIRDP Resettlement Village 1 and RV 2 at Bera Upazila, Pabna District	Nov 12, 2012	0	20
2	Bheka Union: Jalalpur Police Station: Enayetpur Upazilla: Shajadpur Dist: Sirajganj	Dec 12, 2012	10	17
3	Baoikhola Union: Jalalpur Police Station: Enayetpur Upstream of Kojuri unprotected area.	Dec 12, 2012	8	21
4	East Benutia Union: Gala Upazilla: Shajadpur Downstream Kojuri unprotected area. Dist: Sirajganj	Dec 12, 2012	12	19

SL. No.	Location of Discussion	Date of Discussion	No. of Participants	
			Male	Female
5	Shelachapia Union: Rupbati Upazilla: Shajadpur Dist: Sirajganj Left bank of Hurasagar turning point	Dec 28, 2012	11	12
6	Moyakola Union: Rupbati Upazilla: Shajadpur Dist: Sirajganj	Dec 28, 2012	12	25
7	River erosion point near Chowhali Police Station	Dec 28, 2012	7	27
8	Purba Alia Badh Union: Alia Badh (ward 8) Upazilla: Unprotected downstream of Degreer Char (right bank of Padma) Faridpur H/Q Dist: Faridpur	Jan 3, 2013	8	19
9	Hajiganj Bazar Charshuntailpur Fakir Dangi Union: Gazirtek Upazilla: Char Bhadrashan Dist: Faridpur	Jan 3, 2013	7	27
10	Empidangi Union: Char Bhadrashan Upazilla: Char Bhadrashan Dist: Faridpur	Jan 3, 2013	6	17
11	Haji Dangi Union: Char Bhadrashan Upazilla: Char	Jan 3, 2013	14	23
12	Munshikandi Union: Bagotia, Upazilla: Daulatpur, on the left bank of Jamuna. Dist: Manikganj	Jan 4, 2013	15	12
13	Goaria Union: Deota Upazilla: Tepra/Shibalaya Dist: Manikganj	Jan 4, 2013	8	21
14	Chhelachapri village, on embankment Karotoya-Baral-Hurasagar	Feb 2, 2013	12	8
15	Uttar Shambupur (Bherakhola Hat)	Feb 2, 2013	50	0
16	Bherakhola Village	Feb 2, 2013	10	0
17	Char Andar Manik	Feb 2, 2013	8	2







### 5.2.6 Public Disclosure of RP

141. Project design, impact and policies for mitigation of adverse social and environmental impacts will be disclosed to the influence area people particularly the affected persons and host communities. A summary of this RP will be translated into Bangla and will be made available to the affected people by the Executing Agency (EA) prior to Loan Appraisal. An information booklet has been designed for approval of the government for distribution among the affected persons as the primary tool for disclosure (AnnexureVI). This will be translated into Bangla. Disclosures will also be continued using the following other instruments:

Community Workshops;

Information Brochures;

Information in Focal Points at District, Upazila and Union Levels;

Information Pamphlets;

Personal Contact;

Village Level Meeting; and possibly

Rickshaw Speakers



**Figure 5-1: Rickshaw Speaker, JEMPEMP RV-1, May 11, 2013**

142. As the Illiteracy rate in the total Tranche-1 area is high(34% males, 43% of females, and overall 38%), there will be emphasize on visual presentation during community workshops and village level meetings. As the area is electrified, illustrated Power Point presentations will be included in meetings for the benefit of those who cannot read. In case of change in Project design thereby entailing change in resettlement impacts, this RP will be updated. The updated RP will be disclosed to the APs, endorsed by the EA. The updated RP will be submitted to the ADB for approval prior to award of civil works contracts for the Project. The draft RP/updated RP/final RP will be forwarded to ADB for posting on the ADB web site.

### **5.2.7 Strategy for Community Consultation and Participation during Implementation**

143. BWDB will continue the consultation process during the implementation of the RP. Resettlement related brochures, leaflets and other communications materials in the local language (Bangla) will be published for distribution among the affected households. These materials will also be available in the Union Parishad, Upazilas and district offices in the project area. Further steps will be taken to (i) keep the affected people informed about additional land acquisition plan, compensation policies and payments, resettlement plan, schedules and process, and (ii) ensure that project-affected persons are involved in making decisions concerning their relocation and implementation of the RP. The consultation and participation will be instrumented through individual contacts, FGDs, open meetings and workshops.

144. In sum, consultation will remain a hallmark in the project implementation processes. The consultation meetings, issues discussed and outcomes and subsequent follow-up actions will all be recorded for future verification. The cost of carrying out the consultations (hospitality, rental of meeting room, transportation, etc.) will be appropriately budgeted (See Budget below).

## **6 Grievance Redress Mechanism**

145. The BWDB will constitute RP implementation committees such as Joint Verification Team (JVT),<sup>24</sup>Property Valuation Advisory Committee (PVAT) and a Grievance Redress Committee (GRC) for the various RP implementation activities ensuring Stakeholder participation. A local GRC, gazetted by the GoB, will be composed of: a) Representative from BWDB - Convener(Executive Engineer (Field)/Equivalent); b)Chairman concerned Union Parishad – Member; c)Representative from APs – Member; d)Sub Assistant Engineer From BWDB - Member Secretary. The local GRC will by meeting all

<sup>24</sup>JVT will be constituted of: i) Representative from BWDB - Convener ( SDE/AE/Equivalent officer); ii) Representative from concerned DC – Member; iii) Sub Assistant Engineer from BWDB - Member Secretary

the aforementioned participants informally, as well as formally, to ensure speedy and out of court settlement of as many disputes as possible.

146. The fundamental objectives of GRCs will resolve any resettlement-related grievances locally in consultation with the aggrieved party to facilitate smooth implementation of the RP. Another important objective is to democratize the development process at the local level and to establish accountability to the affected people. The GRC is a project level mechanism for receiving and resolving project related grievances. The costs associated with the GRC will be appropriately budgeted in the RP. Irrespective of the GRC decisions, an aggrieved person will be free to access the country's legal system at any stage of the grievance redress mechanism.

147. The functions of the GRCs will be to:

- Receive applications and hold hearings on AP grievances concerning the Project, in particular regarding resettlement issues.
- Refer APs to the concerned authority/Deputy Commissioner if the grievance can be dealt through conventional law or by arbitration.
- Make decisions to resolve AP grievances following RP policy if outside conventional law and if the grievance does not lend itself to arbitration.
- Prepare recommendations according to the procedure described by the GRC in resolving AP complaints.

148. The GRCs will receive AP grievances and resolve grievances in the following manner:

- The GRC shall meet to resolve the AP grievance within 10 days of its receipt and will preserve the records and procedure of the meeting. The GRC will mention the basis of its resolutions in the written record of its meetings. If grievances cannot be resolved within 10 days, as stated above, irrespective of the GRC decisions, an aggrieved person will be free to access the country's legal system at any stage of the grievance redress mechanism.
- The GRC will publicize its decisions regarding AP grievances through local community meetings and through the distribution of leaflets to the public.
- All the GRC activities will take place in the office of the GRC chairperson.

149. All GRC members will attend a training and orientation meeting prior to commencement of their work. The training will be conducted by Project staff and the CSC's resettlement experts. The GRC members (except for BWDB and RP-INGO representatives) will be entitled to Tk. 300/- (three hundred) per day as honorarium from the implementing RP-INGO budget (i.e., reimbursable head). Light snacks/refreshments will be provided during the meetings under the NGO budget. In case of day-long meeting, GRC members may also be served lunch. Necessary stationery and other logistics will be made available by the NGO. More details on the set up and responsibilities of the GRC are found in Chapter 9 Institutional Arrangements for RP Implementation. The GRC will be on going throughout implementation.

## 7 Legal and Policy Framework

### 7.1 GOB Laws on Land Acquisition

150. The principal legal instrument governing land acquisition in Bangladesh is the Acquisition and Requisition of Immovable Property Ordinance II (1982) and subsequent amendments of the Ordinance II (1989/93/94) and other land laws and administrative manuals relevant to alluvion/deluvion land, char and khas land administration in Bangladesh.<sup>25</sup> The 1982 Ordinance requires that compensation be paid for (i) land and assets permanently acquired (including standing crops, trees, houses); and (ii) any other damages caused by such acquisition. The Deputy Commissioner (DC) determines (a) market value of acquired assets on the date of notice of acquisition (based on the registered value of similar property bought and/or sold in the area over the preceding 12 months), and (b) 50% premium on the assessed value (other than crops) due to compulsory acquisition. However, it is well known in Bangladesh that people devalue land during transactions to pay lower registration fees. As a result, compensation for land paid by DC including premium remains less than the real market price or replacement value. The 1994 amendment made provisions for payment of crop compensation to tenant cultivators.

151. In addition to the Ordinance, another relevant law that applies to the Project due to acquisition of bankline for riverbank protection (RBP), is the State Acquisition and Tenancy Act 1951 (Section 7) that defines the ownership and use right of alluvion (*payosti*) and diluvion land (*sikosti*) in the country. Legally, GOB owns the bankline and eroded land in the river. However, the “original” owner(s) can claim the land if it re-emerges in a natural process within 30 years from the date of erosion.

#### 7.1.1 Inadequacies of 1982 Ordinance

152. The Ordinance, however, does not cover project-affected persons without title or ownership record, such as informal settler/squatters, occupiers, and informal tenants and lease-holders (without registration document) and does not ensure replacement market value of the property acquired. The act has no provisions for resettlement of the affected households/businesses or any assistance for restoration of livelihoods of the affected persons. As a result, land acquisition potentially diminishes productive base of farm families and those affected and displaced by development projects.

#### 7.1.2 Harmonization with ADB’s Policies

153. The ADB has its own safeguard policies to minimize displacement and require time-bound action plans with measures to restore or improve livelihood and income of those affected by development projects. Since the 1982 Ordinance falls short of the requirements of the ADB’s safeguard policies on many grounds, the project land acquisition and resettlement policy has been harmonized with ADB’s safeguard policies.<sup>26</sup> The harmonization was carried out through a gap analysis involving the 1982 Ordinance II and the ADB’s safeguard policies and gap-filling measures. The harmonization has also benefited from the Jamuna Bridge and Jamuna-Meghna River Erosion Mitigation Project (JMREMP) “best practices” in resettlement. The best practices – for example, include Photo ID Card with description of losses and entitlements, Video filming of ROW to control fraudulent claims, Resettlement sites with civic amenities, multiple relocation options, including “self-managed” resettlement.

154. The harmonized policy forms the basis for preparation of social safeguard plans for various components of the project. The harmonization and gap-filling measures are in Annexure I and Annexure II, respectively.

---

<sup>25</sup> Alluvial, deluvial and *char* land survey and settlement ( No. 2-2/87/90(1060)/1987; Settlement of char land (No. 2L-3/73/86(19)-R.L/1973; Settlement of Deluviated Lands Reformed in Situ (Memo No. 196(36)-V-177/77-L.S /1978), State Acquisition and Tenancy (Amendment) Act, 1994; Transfer of *Khas* Land between GOB departments (M:/Sha-10/HUD/general-1/94/345(64)/1994 (source: Land Administration Manual, Vol. 1, Ministry of Land, GOB).

<sup>26</sup> ADB, Safeguard Policy Statement (SPS 2009). <http://www.adb.org/documents/safeguard-policy-statement>

## 7.2 Policy Principles and Guidelines

155. In view of the harmonization, the project will apply the following policy guidelines and procedures to comply with ADB's safeguard compliance requirements:

- (i) Avoid or minimize impact as much as possible through alternative design options;
- (ii) Consult affected people and their communities adequately;<sup>27</sup>
- (iii) Make resettlement plans and other related documents available at the project sites;
- (iv) full disclosure will be ensured through distribution of a summary RP in Bangla to the affected households and other stakeholders;
- (v) Determine replacement cost of assets acquired and compensate at full replacement costs determined by Property Valuation Advisory Committee;
- (vi) Provide Resettlement assistance to all APs, irrespective of their titles to land;
- (vii) Establish grievances redressal committees at the local level for speedy resolutions of disputes;
- (viii) Provide additional assistance to poor women-headed affected households (AHs) and vulnerable groups;
- (ix) Establish income restoration assistance for alternative income sources and restoration of livelihoods for assisting affected people to restore and/or improve upon their pre-project levels or standards; and

156. All affected households and persons, as per the above policy/principles and guidelines, will be eligible for compensation and assistance to be provided by the project. In case of land acquisition, the date of notification of section-3 for acquisition will be treated as the cut-off date while people without titles such as *nodibhashis* (erosion displaced households squatting on others' land, also called *uthuli*) or informal settlers/squatters living in the acquired area, the date of census or similar designated date by the BWDB will be considered as the cut-off date. Any persons moving into the project area after the cut-off date will not be entitled to any assistance. See Figure 7-1 below for various cut-off dates indicated therein according to cluster/mauzas.

### 7.2.1 Planning Steps and Procedures

157. To revise and update any RP, the following procedures and steps will be followed. First any additional new impacts and a Detailed Engineering Design (DD) and stake out of the ROW alignment will be identified through proper detailed measurement survey (DMS), including a census survey, and community consultations. In cases where the DD has revised the impacts, a new cut-off date(s) will be established. Second an inventory of losses (IOL) will be established based on the census survey. Third, updating entitlement matrix ensuring all new impacts and related losses are covered. Fourth, the updated RPs will be disclosed to the APs, as well as disclosure of impacts and entitlements including incorporation of any suggestions from affected groups and communities. Fifth, the valuation of all affected assets will be undertaken and a revised budget will be prepared for payments of compensation. Finally, the updated RPs will be posted on the ADB's website.

### 7.2.2 Eligibility and Entitlements

158. Lack of legal documents for customary rights of occupancy/titles shall not affect eligibility for compensation. The RF stipulates payments of compensation as per the assessed value of the land and structure to the affected persons (APs). In addition to compensation paid by the concerned Deputy Commissioner (DC), the APs will receive additional assistance in cash or kind to match replacement costs, which is the difference between the market value and the assessed value for lost assets (land, houses and trees), transaction costs such as stamps/registration costs (in case of purchase of replacement land) and other cash grants and resettlement assistance such as shifting and

---

<sup>27</sup> Adequacy is defined by number of persons covered (minimum 50 in each consultation), attendance of women and vulnerable groups in each consultation, separate consultation on target group like poor and vulnerable and broad community based understanding of project impacts, mitigation and policies.



reconstruction grant, resettlement benefit for loss of workdays/income due to dislocation. Socio-economically vulnerable households namely-female-headed households without grown up male in the household, households below poverty line, households headed by disabled and elderly people will be given additional cash assistance for relocation. The cut-off dates for the AHs varies in the area but is within March to May 2013 in time of the survey. The detailed dates for different mauzas can be seen in the map below.

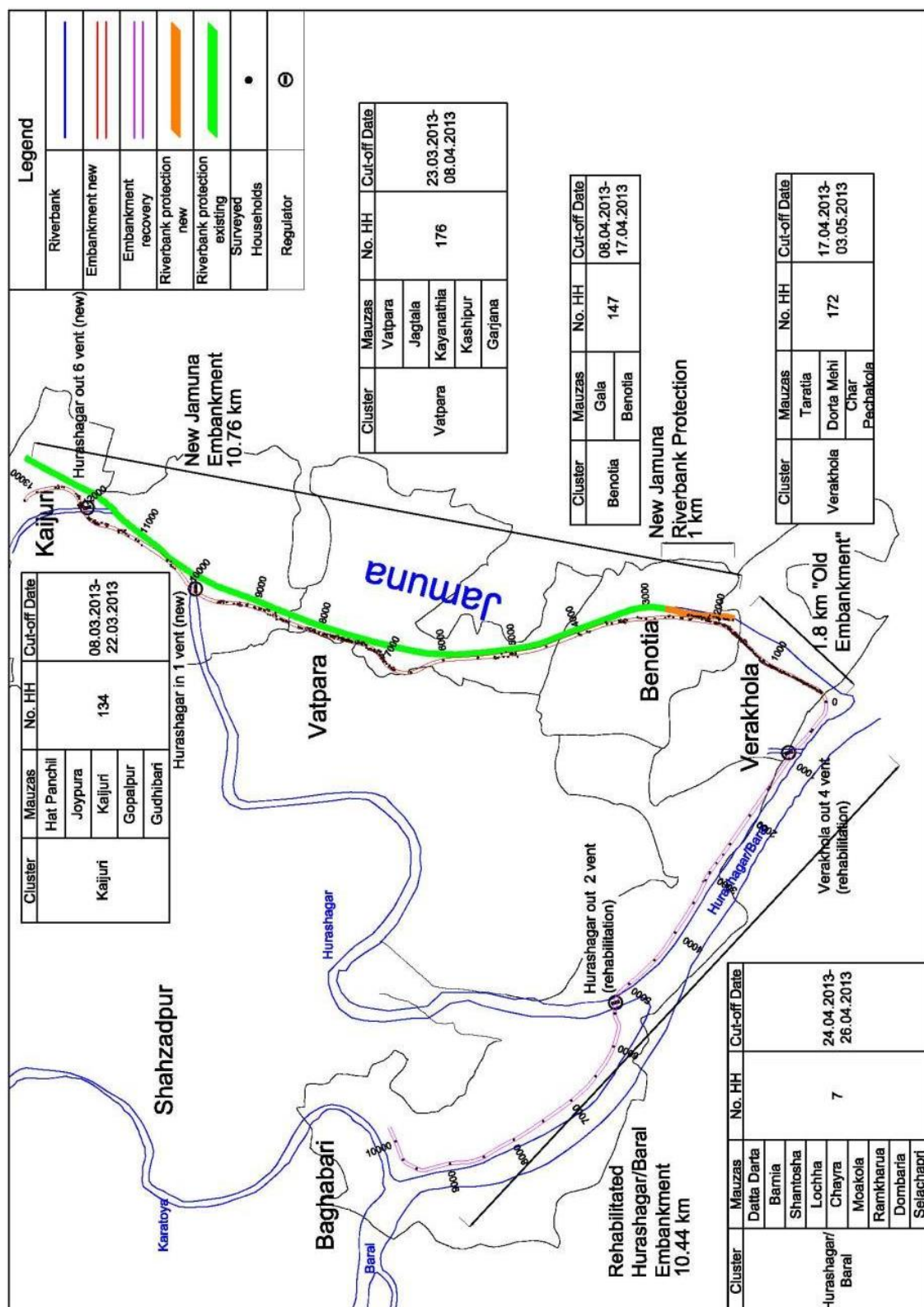


Table 7-1Cut off dates for different clusters:

159. Below provides the entitlement matrix for different types of losses and dislocation established through Inventory of Losses (IOL). The matrix also includes provisions for any unanticipated impacts arising during or post project implementation. The mitigation measures in the matrix are consistent with ADB's safeguard requirements. They also reflect "good practice" for examples (e.g., replacement value for land, dislocation allowance, transfer grant, relocation at project-sponsored RS site, grievance redressal, income and livelihood restoration, third party monitoring etc.) from the Jamuna Bridge Project. Compensation and other assistance will be paid to APs prior to dislocation and dispossession from acquired assets or three months prior to construction activities, whichever is earlier.

### 7.2.3 Unanticipated Impacts on Charlands

160. Although there are no anticipated negative impacts on charlands, the project will monitor the river behavior to assess all unanticipated impacts on chars and char people through the Project's environmental assessment and review procedure (EARP).

### 7.2.4 Valuation of Assets

161. DC follows the rules laid down in the 1982 Ordinance to determine market prices for assets like land, structures and trees/crops, with assistance from other departments such as Public Works

162. Department (PWD) for structures, Forest Department for trees, and Department of Agricultural Extension for crops. The assessed value is typically lower than the replacement value. Indeed, there exists confusion over statutory "market value" and compensation at replacement costs.

163. Where (i) markets provide reliable information about process and (ii) comparable assets or acceptable substitutes are available for purchase, replacement cost is equivalent to "market value" of the replacement land, plus any transaction costs (such as preparation, transfer, and registration fees and taxes).

164. In Bangladesh's rural setting, the conditions noted above are not present. Therefore, to ensure that APs can replace the lost property, a replacement value will be provided as determined by a Property Valuation Advisory Committee (PVAT), which will be constituted by BWDB with a representative from BWDB as Convener (SDE/AE/Equivalent officer), a representative from concerned Upazila (Upazila Nirbahi Officer) as Member, Sub Assistant Engineer from BWDB - Member Secretary, and a representative from the RP-INGO as Member. The CSC provided all technical support to the PVAT to assess the market price and recommend the replacement value of assets, which will be approved by the PD in place of the MoWR. BWDB will pay the difference between the approved replacement cost and the DC payments under the 1982 Ordinance II. In addition, APs will be allowed to take away the materials salvaged from their dismantled houses and shops at no costs (generally, damaged material while dismantling that can still find some use, such as, things like thatch, bamboo and wooden pieces which could be used for fuel), despite compensation paid by the DCs. Re-usable items such as tin roof and/or tin wall which can be carried away undamaged will not be considered for compensation but will be assisted with shifting cost. The entitlement matrix (Table 7-1) describes major types of losses attached to land acquisition and resettlement. The Project will assist the APs in clustered relocations with community facilities or, alternatively, in self-relocation. APs may be relocated to BWDB land (if available) or to plots purchased (by the APs) for which assistance is provided in the form of homestead land development. In addition to the CCL, Resettlement Benefits as per the entitlement matrix will be provided to the APs.

**Table 7-1: Project Eligibility and Entitlement Matrix**

General Implementation Issues and application Guidelines	
<b>1. PVAT</b>	
BWDB will setup a Property Valuation Advisory Team (PVAT) at each locality. The tasks of this PVAT are:	
a)	Recommend Replacement Cost (RC) based on Current Market price (CMP) analysis for Land, Structures, Trees and standing Crops
b)	CMP will be assessed for every affected mauza

- c) The Land Acquisition price will be determined by the standard procedure according to the land acquisition law.
- d) For all private land, the market price will be enhanced by 50% for compensation under law (CCL). For *khas* land (DC is the owner at respective districts on behalf of the government), CCL will be the assessed market price without 50% enhancement.
- e) RC for structure considering the cost of materials, labor inputs and land development cost at current market rates without depreciation.
- f) RC will be approved by the Project Director.

## 2. INGO

BWDB will engage a NGO to support implementation of resettlement plan i.e. to support the implementation of all land acquisition and resettlement activities. The NGO (INGO) will

- a) Identify all persons who have interest in the lands that will be acquired under the project (owner, tenants, operators etc.;
- b) identify all informal occupier/ settler on the right of way of new embankment, rehabilitation embankment and RBP works;
- c) Make the landowners / tenant/ informal occupier aware about details of land acquisition process, compensation entitlement, payment procedure/ mechanism, resettlement benefit offered by the project.
- d) Legal owners will be assisted by INGO to organize legal documents in support of their ownership
- e) INGO will identify loss and entitlement of female owners and co-sharers through share determination at the field upon receipt of payment data from the DC office
- f) The INGO will inform the APs of the details of the land acquisition and compensation process, resettlement package and payment procedure.
- g) The INGO shall encourage Entitled Persons (EPs) to consider purchasing land or investing the money in productive/income generating activities.

## 3. JVT

- a) The loss inventory items and quantities as well as the Entitled Persons (EP) shall be verified in the field through Joint Verification Team (JVT) formed by DC. The members of PVAT will attend field verification by JVT.
- b) The JVT will verify the socially recognized User as identified by the Census

4. BWDB field office (Executive Engineer) will do Title updating for usufruct and other rights before issuance of notice with assistance from INGO

5. DC will pay CCL for the Loss Items. If RC is higher than CCL, the difference will be paid by BWDB with assistance from INGO.

6. Compensation for Structures:

- a) Joint Verification (DC and BWDB) and/or Census will identify (record floor areas and category) of structure
- b) Compensation must be paid before AP dismantle and remove the structures as per civil works requirement
- c) The date of service of notice will be recognized as the cut-off date for structures not recognized by DC. In case of major differences identified between databases, BWDB will verify the data through the Joint Verification Team (JVT).
- d) The owner is allowed to take all salvageable material (as defined in para. 164)
- e) The RC will be the cost of the structures at market price minus prices of reusable material (as defined in para. 164)

Unit of Entitlement	Entitlements	Applicable Law	Additional Services
Loss Item 1: LOSS OF AGRICULTURAL LAND			

Unit of Entitlement	Entitlements	Applicable Law	Additional Services
Legal owner(s) as identified by Deputy Commissioner (DC) in the process of CCL payment.	1. Replacement Cost (RC) <sup>28</sup> of agricultural land.	LA Act 1982 Sec 8(1)(a), Sec 8(2)	
<b>Special Implementation Issues and application Guidelines:</b>			

<b>Loss Item 2: LOSS OF HOMESTEAD, COMMERCIAL, INDUSTRIAL LAND AND COMMON PROPERTY RESOURCES</b>			
Legal owner(s) as identified by DC in the process of CCL payment.	1. RC of land. 2. A plot in the residential or commercial area of the resettlement village (RV), if required, for the homestead or commercial land losers respectively.	LA Act 1982 Sec 8(1)(a), Sec 8(2)	1. RVs for the APs of entitled land-owners will be developed on privately-owned purchased land(s) inside the embankment in close proximity to AH population. 2. BWDB will assist purchase of above land(s) jointly with INGO on negotiated price and homestead land development (earth filling, if needed.) with internal road links.
<b>Special Implementation Issues and application Guidelines:</b>			

<b>Loss Item 3: LOSS OF WATER BODIES (PONDS, BOTH CULTIVATED AND NON-CULTIVATED)</b>			
Legal owner(s) as identified by DC in the process of CCL payment.	1. RC of the water body (private land).	LA Act 1982 Sec 8(1)(a), Sec 8(2)	.
<b>Special Implementation Issues and application Guidelines:</b>			

<b>Loss Item 4: LOSS OF RESIDENTIAL STRUCTURES WITH TITLE TO LAND</b>			
Legal owner(s) as identified by DC in the process of CCL payment.	1. RC of residential structure with salvage material, subject to General Implementation Issues 6(d and e) 2. Transfer Grant @ Tk. 10 per sft of affected structure but not exceeding Tk. 3,000. 3. Reconstruction and Homestead Development Grant (RHDG) of Tk. 8,000.	LA Act1982 Sec 8(1)(d) Sec 8(2)	Assistance in relocation and reconstruction.
<b>Special Implementation Issues and application Guidelines:</b>			

<b>Loss Item 5: LOSS OF COMMERCIAL/INDUSTRIAL/COMMON RESOURCE PROPERTY (CPR) STRUCTURES WITH TITLE TO LAND</b>			
Legal owners as identified by DC in the process of CCL payment.	1. RC of commercial, industrial, CPR structure 2. Transfer Grant @ Tk. 10 per sft of affected structure but not exceeding Tk. 3,000. 3. Reconstruction Grant of TK10,000.	LA Act1982 Sec 8(1)(d) Sec 8(2)	Assistance in relocation and reconstruction.
<b>Special Implementation Issues and application Guidelines:</b>			

<b>Loss Item 6: LOSS OF RESIDENTIAL AND OTHER PHYSICAL STRUCTURES (WITHOUT TITLE TO LAND)</b>			
Socially recognized owners of structures built on the ROW	1. RC of structure 2. Transfer Grant @ Tk. 10 (ten) per sft of affected structure but not exceeding Tk. 3,000 3. Reconstruction and Homestead Development Grant (RHDG) of Tk. 8,000 plus a provisional option of obtaining a free land from BWDB in an RV on the ROW with community facilities.	LA Act1982 Sec 8(1)(d) Sec 8(2)	
<b>Special Implementation Issues and application Guidelines:</b>			

<sup>28</sup>The costs of replacing lost assets (e.g., land, houses/structures, trees and crops) and income, including cost of transaction.

Unit of Entitlement	Entitlements	Applicable Law	Additional Services
1. The homestead losers will produce documentary evidence and the BWDB through JVT will cross verify the landlessness of the homestead losers for allocation of an RV plot for free. 2. The RP-INGO will assist the APs to move to clustered relocations (resettlement villages) with community facilities or, alternatively, in self-relocation. The APs may be relocated to BWDB land (if available) or plots purchased (by the APs) for which assistance will be provided in the form of homestead land development.			

Loss Item 7: LOSS OF TIMBER AND FRUIT BEARING TREES, BAMBOO AND BANANA GROVES			
1. Legal owner(s) as identified by the DC in the process of CCL payment. 2. Socially recognized owners of trees grown on public or other land	1. Timber trees and bamboo: RC of trees and bamboo. 2. Fruit-bearing trees without timber: if the tree is at or near fruit-bearing stage, the estimated current market value of the fruit. 3. Fruit-bearing trees with timber: RC for the timber, and estimated current market value of fruit. 4. Banana groves: RC of all trees 5. Owners will be allowed to fell trees and take the timber, free of cost after payment of CCL or RC as applicable.	LA Act1982 Sec 8(1)(b) Sec 8(2)	INGO to explain RP policies regarding compensation for the trees of different categories and size and make the EPs aware that they could take the timber and fruits free of cost.
Special Implementation Issues and application Guidelines:			
1. The INGO will provide guidance in plantation and post-plantation care.			

Loss Item 8: LOSS OF STANDING CROPS/FISH STOCK			
1. Legal owners identified by the DC in progress of CCL payment 2. Socially recognized owners	1. RC of standing crops/fish stock. 2. Owners will be allowed to harvest crops and fish stock.	LA Act1982 Sec 8(1)(b) Sec 8(2)	INGO will assist APs in the process of claiming compensation from DC offices for organizing necessary documents.
Special Implementation Issues and application Guidelines:			

Loss Item 9: LOSS OF LEASED /MORTGAGED IN LAND/PONDS			
1. Leaseholder with legal papers. 2. Socially recognized lessee or sharecropper, in case of customary informal tenancy arrangements, including socially recognized agreements.	1. RC of crops/fish stock. 2. Outstanding lease money back to the lessee by the owner as per agreement.		1. INGO will assist in ensuring that the lessee receives all eligible payments. 2. INGO will mediate refund of outstanding lease money by the owner to the lessees.
Special Implementation Issues and application Guidelines:			
1. With legal agreement: legal owner and mortgagee/leaseholder will be paid CCL by DC in accordance by the law2. With customary tenancy agreements, including socially-recognized verbal agreements: Legal owner will receive CCL from DC. The legal owner will pay the outstanding liabilities to the lessee/mortgagee. Under the following conditions: (i) all contractual liabilities are already paid up; (ii) if not, the legal owner will get the residual payment after all liabilities are paid up.3. BWDB will ensure RC of crops to the cultivator with direct payment of the difference, if CCL is less than RC, with assistance from INGO.4. Dislocation Allowance will be paid to the actual cultivator of the acquired land by BWDB with assistance from INGO.			

Loss Item 10: LOSS OF INCOME FROM DISPLACED COMMERCIAL/ INDUSTRIAL PREMISES (OWNER OPERATED)			
Any proprietor or businessman or artisan operating in premises	1. Grant for Loss of Business @ 5% of DC's payment for the structure. 2. One time Moving Assistance of Tk. 5,000 for tenants. 3. Option to purchase a plot in the RV, with the assistance of the INGO	LA Act1982 Sec 8(1)(d) Sec 8(2)	EPs will be brought under income and livelihood regenerating program (ILRP).
Special Implementation Issues and application Guidelines:			
1. All the business operators will be entitled for grant against loss of The onetime moving assistance will be provided to			



Unit of Entitlement	Entitlements	Applicable Law	Additional Services
only the tenants.			
<b>Loss Item 11: TEMPORARY LOSS OF INCOME (WAGE EARNERS IN AGRICULTURE, COMMERCE &amp; SMALL BUSINESS AND INDUSTRY)</b>			
Regular wage earners affected by the acquisition.	1. Tk. 2,500 per affected household (AH) 2. Or Tk. 3,500 for AH headed by women 3. Employment in the Project construction work, if possible		1. EPs will be brought under the ILRP.
<b>Special Implementation Issues and application Guidelines:</b>			
EP must have been an employee of landowner or business located in the acquired lands for at least twelve months, as identified by Joint Verification and/or a contracted institution or a consulting company's census.			
<b>Loss Item 12: LOSS OF INCOME FROM RENTED -OUT AND ACCESS TO RENTED-IN RESIDENTIAL/COMMERCIAL PREMISES</b>			
1. Owner of the rented-out premises 2. AH/person rented-in any such structure	Dislocation Allowance of Tk. 4,000 for each unit of premises to both the renter and the rentees.	LA Act 1982 Sec 8(1)(d) Sec 8(2)	EPs will be brought under the ILRP.
<b>Special Implementation Issues and application Guidelines:</b>			
<b>Loss Item 13: ADVERSE IMPACT ON HOST POPULATION DUE TO RELOCATION OF APs</b>			
Households self-relocated to the host villages	Enhancement of carrying capacity of common civic amenities/utilities of the host communities as per assessment by BWDB.		1. Investment in the host area to improve health, education, and other public services. 2. Forestation in the host area.
<b>Special Implementation Issues and application Guidelines:</b>			
Community needs for enhancement of common facilities in host areas will be assessed through a needs assessment survey.			
<b>Loss Item 14: VULNERABLE AHs SPECIAL ASSISTANCE</b>			
<i>Vulnerable AH Assistance:</i> Female-headed households, disabled, elderly, extremely poor and those losing more than 10% of their income to acquisition of land or business.	One-Time Special Assistance Grant of Tk 5,000 Skill training and credit support under ILRP.		EPs will be brought under the ILRP.
<b>Special Implementation Issues and application Guidelines:</b>			
1. Loss of income will be assessed as per actual loss of productive resources (land and businesses) to the project and the total income of the affected households from all sources through Census of all AHs. 2. JVT will verify the percentage of loss comparing the actual loss and the total income from all sources of the affected households. 3. Households turning into landless due to acquisition of agricultural land will be eligible for larger credit from the ILRP for longer duration.			
<b>Loss Item 15: LOSS OF SUBMERGED LAND (ERODED LAND)</b>			
1. Legal owner(s) of land (DC's khas land after legally established ADLine). 2. Previous private owners of land below AD Line.	1. In absence of legally established AD line, all entitlements as provisioned for Loss Item 1. 2. In case of <i>khas</i> land, CCL to respective DCs. 3. RC of <i>khas</i> land to previous owner(s).	LA Act 1982 Sec 8(1)(a), Sec 8(2)	
<b>Special Implementation Issues and application Guidelines:</b>			
<b>Loss Item 16: UNFORESEEN ADVERSE IMPACTS</b>			
Households/persons affected by any	Entitlements will be determined as per the resettlement policy framework		As appropriate

Unit of Entitlement	Entitlements	Applicable Law	Additional Services
unforeseen impact identified during RP implementation			
<b>Special Implementation Issues and application Guidelines:</b>			
The unforeseen impacts and affected persons will be identified with due care as per policy framework and proposed to the MoWR and the ADB for approval including quantity of losses, their owners and the entitlements.			

## 8 Definitions of Terms

*Affected Persons (APs):* Affected persons shall include (a) persons whose houses, land, structure, business, income/employment or productive assets are affected by the Project.

*Household:* A household includes all persons living and eating together (sharing the same kitchen and cooking food together as a single-family unit).

*Entitled Person:* An entitled person (EP) is one who has lost his/her assets or income directly/indirectly due to the Project intervention and is eligible to receive compensation from the DC office and/or cash grant from BWDB.

*Structures - Houses and Commercial Enterprises:* All structures affected by Project acquisition -- living quarters, community infrastructures/roadside shops/businesses -- will be compensated for.

*Assistance/Compensation:* Compensation for lost assets refers to legal compensation provided through the Land Acquisition section of the Deputy Commissioner's office. Assistance refers to resettlement assistance extended in cash and/or kind over and above the compensation under law as per independent assessment of replacement price of land and physical assets concurred by a Property Valuation Advisory Team (PVAT).<sup>29</sup>

*Relocation/Resettlement:* Relocation refers to physically moving of the APs from the affected area to a new area/site and rebuilding homes, assets, including productive land/employment while resettlement means re-establishing income, livelihoods, living and social system.

*Replacement Land:* Those affected by the RoW alignment will receive alternative land, if available, or cash compensation at the replacement price. NGO will assess the market value of land to determine the Maximum Allowable Replacement Value (MARV) and be approved by PVAT.

*Project Affected Communities/Host Villages::* Project-affected communities are local villages, markets or townships that may be affected by Project impacts such as loss/dislocation/capacity inadequacy of common property resources, school, mosques etc. Host communities are recipients where APs are to be relocated.

*Vulnerable Households:* For this Project, vulnerable groups are defined as APs who suffer more - economically and socially - from relocation than other affected population. Based on past experiences from similar projects, the vulnerable groups include (i) women-headed HHs; (ii) landless HHs (those without agricultural land, and depend largely on wage labor for survival); (iii) disabled HHs heads and (iv) HHs having residual agricultural land less than 1 acre or losing more than 10% of their income from agriculture due to acquisition.

*Cut-Off Date.* The Cut-Off Date is the date after which eligibility for Resettlement Benefits will not be considered. Because of the vagaries of river bank erosion, there are two Cut-Off Dates: **[Month/Day/Year] for Physical Losses** and **[Month/Day/Year] for Income Losses**, subject to verification and clearances as described below.

- **Physical Losses Cut-Off Date.** Because of the ongoing nature of Bank erosion, an *Inventory of Households and Assets between the Embankment and the Bankline* conducted in **[Month-Month, Year]** that indicated all HHs that might possibly be on the ROW by start of construction and so be considered for physical losses due to land acquisition. The Physical Losses Cut-Off Date of **[Month/Day/Year]** includes, therefore, only HHs having houses and establishment within the ROW at the beginning of physical works construction as identified by BWDB's Joint Verification Team (JVT).
- The *Inventory Survey* is subject to verification by the JVT and approval by BWDB, considering not only the original Inventory but the Socioeconomic Survey (SES) and JVT data collected just prior to civil works construction. In case of discrepancies, GRC will determine eligibility for individual

---

<sup>29</sup> The PVAT will be composed of: i) Representative from BWDB- Convener(SDE/AE/Equivalent Officer);

ii) Representative from concerned DC – Member; and iii) Sub Assistant Engineer From BWDB - Member Secretary, and iv) Member INGO.

HHs for Resettlement Benefits, such as: Replacement Cost (RC) of Structure; Salvaged Material; Transfer Grant; Reconstruction Grant; and Homestead Development Grant.

- *Income Losses Cut-Off Date.* Among the Resettlement Benefits to be given to APs are Subsistence Grants for Loss of Income. The Socioeconomic Surveys (SES) completed [Month/Day/Year] serve as the Cut-Off Date for eligibility to receive the Income subsistence Grants for: Male And Female HH Heads; Small Business Enterprise (SBE) Proprietors and Employees; and for Tenants/Sharecroppers. As with the Inventory Survey data, the SES Cut-Off Date is subject to verification by BWDB's Inventory Joint Team (JVT) and approval by BWDB.
- *Land Acquisition* is not covered by these Cut-Off Dates. CCL will be paid by the DC as per GOB LA Law; and the INGO, with BWDB approval, will provide Grants for *Replacement Value<sup>30</sup> of Land and other properties established* by the PVAT and according to the *Resettlement Entitlement Matrix* in Section 4 below.

## 9 Income and Livelihood Restoration Program (ILRP)

165. Change in land-use pattern, as a result of infrastructure development projects, often leads to adverse impacts on the assets and livelihood resources of the project affected communities. Restoration of income of those affected to pre-project level is thus one of the most important tasks in resettlement management. The RP has provisions for alternative income generating/skill development and other enabling strategies through which APs can either continue their previous occupation or can start new venture or undertake an alternative occupation. The basic objective behind the income and livelihood restoration activities and schemes is to restore the economic status of the affected persons enjoyed prior to the project, which also complies with the ADB's safeguard policies on involuntary resettlement.

### 9.1 Impacts on Income

166. Affected persons will experience loss of livelihood sources mainly due to loss of shops/commercial enterprises and agricultural fields. In addition, wage earners such as employees in shops and businesses and those working on the affected agriculture fields will also incur impact on their income and thus have also been included in this income and livelihood restoration plan. A total of 1,184 such AHs will experience direct and indirect impact on their income (See Table 9.1).

**Table 9-1: Types of Income impacts on Affected Households**

Type of Loss	AHs
Loss by Dislocation of House and Commercial Establishment	594
Losing more than 10% of Income Due to Land Acquisition	548
Loss of Wages and Employment	42
Total	1184

167. During the SES April-May 2013, male and female respondents identified their main occupation.<sup>31</sup>The following Table 9-2 is a rough estimate of the *order of magnitude* of the total AP's main occupation based on the 20% random selected SES.

**Table 9-2: Estimated Main Occupation of APs, by Gender and Percentage (APs2,694)**

Male	APs	%	Female	APs	%
Agricultural Day Labor	552	42.2	Housewife	1242	89.7
Non-Agricultural Day Labor	360	27.5	Non-Agricultural Day Labor	44	3.2
Business	264	20.2	Tailoring	44	3.2
Service	180	13.8	Service	33	2.4
Weaving	108	8.3	Retired	33	2.4
Tailoring	60	4.6	Agricultural Day Labor	11	0.8
Retired	60	4.6	Weaving	11	0.8
Disabled/Old/Unemployed	36	2.8	Disable/Old	11	0.8
Farming	12	0.9	<b>Total</b>	<b>1385</b>	<b>100</b>
Blacksmith	12	0.9			
Rickshaw/Van/Cart Pulling	12	0.9			
Migrant	12	0.9			
<b>Total</b>	<b>1,309</b>	<b>100</b>			

168. Based on the 20% random sample SES, of 4,200 male and female APs, in 638 AHs, roughly 552(42%) male AP's main occupation is agricultural day labor, 360(27%) male APs rely on non-

1. <sup>31</sup>There were roughly 200 male and female respondents respectively in the 20% random sample SES of the 650 AHs. Roughly 40 percent of the identified 'main occupations' were children and students.



agricultural day labor, some 264 (20%) male APs rely on business as their main occupation, 180 (14%) rely on service, 108 (8%) on weaving, 60 (4%) tailoring, 60 (4%) are retired, 36 (2%) unemployed or disabled, 12 are farmers (1%), 12 (1%) blacksmiths, 12 (1%) rickshaw drivers, and 12 (1%) are labor migrants.

169. Most of the APs live on the RoW of the proposed new 12.5 Km Jamuna EMB, including the 2 Km OE or the 1 Km proposed new Jamuna RBP. There are 3 cluster areas of about 200 AHs each, around Koijuri in the north, around Vatpara in the center, and around Verakhola in the south. These APs are primarily landless erosion refugees living in CI roofed houses. Therefore, only roughly 1% the APs are farmers, whereas nearly 55% of males are agricultural or non-agricultural day-laborers or rely on business (20%), service (14%), weaving (8%) or a miscellany of occupations such as rickshaws, tailoring, black-smithy or labor migration.

170. In contrast, the 10.44 Km Rehabilitated Hurashagar/Baral EMB, has only some 10 AHs residing within the RoW. There it is expected that most male APs rely on farming as their main occupation, either as owners, leasers, or owners.

171. For women APs, the vast majority, 1,242 (89%) list their main occupation as housewife. Only a tiny majority have other main occupations such as non-agricultural day labor - 44 (3%), tailoring – 44 (3%), service 33 (2%), agricultural day labor 11 (1%) or weaving 11 (1%).

172. Livelihood also means resources in the project-affected area of the Project include land (agricultural land and fish ponds), transportation in roads and waterways, and commercial and businesses activities. People engaged in commercial and business activities include traders, transporters, hawkers, and ferry/boat operators; and those engaged in agricultural activities include farmers, sharecroppers and agricultural laborers. Women are involved in poultry/cattle-raising and nakshi (embroidery) work for cash income. This broader definition of 'livelihood' of resources AHs rely on has not been fully documented; however, at the beginning of the FERMIP implementation, a contracted national Livelihood Development NGO (LD-NGO) experienced in livelihood will conduct a 'demand study' to design an appropriate livelihood program. See para 241 for income and employment generation for women.

## **9.2 Approach towards Income and Livelihood Restoration**

173. The main objective of income and livelihood restoration program is to improve or, at least restore, the livelihood of all displaced person. The Plan recognizes diminishing income and dislocation of livelihoods during and after relocation. As a result, in addition to providing compensation and resettlement benefits, appropriate support measures have been included for income and livelihood restoration of those affected. The FERMIP will adopt two-fold approach for ILRP over a 4 year period of the Tranche-1, in JRB-1, LRB-2, and PRB-1 Sub-Reaches. To begin with there will be short-term livelihood restoration followed by a long term develop plans, to be implemented by local, specialized NGOs coordinated and supervised by the national Livelihood Development NGO (LD-NGO)

174. The RP also recognizes the time needed for social absorption of the affected population in the new social and economic settings (of the resettlement village). In keeping with the same, income and livelihood restoration efforts will be extended to those affected in form of both short-term support and long-term program to achieve sustainable livelihood for affected households.

175. While income losses may occur, there are also ways that the proposed EMB infrastructure can actually provide increase in AP income by taking advantage of new possibilities created by the infrastructure. During PPTA field work, observations on livelihood resources led to some potential strategies for optimizing EMB positive impacts on AP income. Even without livelihood interventions, since JMREMP EMP was finished in 2011, investors are buying land, building houses for rental purposes, planting fruit trees, etc. The security of the EMB/RBP will allow, even for displaced APs, to have security. During FDGs in the PPTA, many APs have said that security is the top priority and when the EMB/RBP is in place, their livelihood situation will improve automatically.

176. Annexure XII: *Indicative Local Livelihood Resources Enhanced by EMB/RBP Investment for AP Livelihood* shows some of potential of local resources being enhanced by the EMB/RBP investment,

increasing income for APs. This includes social forestry<sup>32</sup> for fodder (or other) trees on EMB slopes and vetiver (or other, such as napier, already used locally) grass<sup>33</sup> on EMB Crest slopes; handloom lungis produced in Resettlement Villages (RVs) having lower transportation cost due to stabilized RBP for boat landings and the EMB road linking this remote area to national highway system;<sup>34</sup> and Tilapia (or other species) ponds at the RVs.<sup>35</sup>

177. The broader definition of 'livelihood' of resources AHs rely on has not been fully documented during the PPTA; however, at the beginning of the FERMIP implementation, a contracted national Livelihood Development NGO (LD-NGO) experienced in livelihood will conduct a '*demand study*' to design an appropriate livelihood program. The demand survey will verify the above options are viable by document that the necessary skills exists amongst the AHs to undertake these activities as well as there is assured market exist for the same. From JREMP experience (confirmed in 2012-2013 PPTA Team FDGs in JMREMP Villages), Tailoring skill training was popular for women, so this may be the first skill training component organized.

178. The approach endorsed by PPTA's Chain Value Report of April 2013 has been to seek market or opportunity-driven initiative in selecting subsectors or products for promotion and employment creation. The component does not subsidize business transactions by giving grants to individual or groups that may distort market creating disincentives for others. But in case of demonstration of new products or technologies the AHs will be given incentives normally in the form of in-kind inputs and training to cover risks of new product and techniques. All affected agricultural plot user AHs (548) are considered vulnerable through loss of 10% or more of their income and will be eligible for the Income and Livelihood Restoration Program (ILRP). The value chain analysis focused on ways to improve productivity of existing products either by increasing sales revenue through market related interventions or reducing cost and increasing production through production related interventions or both. The strategy also emphasizes diversification of income sources by introducing totally new types crops for example, bottle gourd and bitter melon, flood plain fisheries, etc. and/or expanding presently small subsectors such as poultry and pond fisheries. Annexure X provides excerpts for the market viability and planning in Tranche-1 Upazilas (focusing on Shajadpur Upazila) for: 1) Livestock (Dairy, Fattening and Sheep Rearing); 2) Fisheries; 3) Poultry (Broiler, Sonali Chicken, Local Chicken and Duck), 4) Selected Winter and Summer Vegetables (Brinjal and Cucurbits) for homestead gardens, and 5) Homestead-based small high-value fruits (mango, litchi, baukool and guava) orchard subsector - all applicable to landless erosion refugee AHs living along the new Jamuna EMB.<sup>36</sup> If vetiver grass is used on

---

<sup>32</sup>IFAD: Bangladesh: *Char Development and Settlement Project - Phase IV*.

[http://www.ifad.org/operations/pipeline/pi/bd\\_char.htm](http://www.ifad.org/operations/pipeline/pi/bd_char.htm)

<sup>33</sup>Vetiver is a perennial grass of the Poaceae family, native to India. The leaves of vetiver are a useful byproduct to feed cattle, goats, sheep and horses. The nutritional content depends on season, growth stage and soil fertility. Under most climates, nutritional values and yields are best if vetiver is cut every 1-3 months. Indonesia, China, and Haiti are major producers. Vetiver processing was introduced to Haiti in the 1940s by Frenchman Lucien Ganot. In 1958, Franck Léger established a plant on the grounds of his father Demetrius Léger's alcohol distillery. The plant was taken over in 1984 by Franck's son, Pierre Léger, who expanded the size of the plant to 44 atmospheric stills, each built to handle one metric ton of vetiver roots. Total production increased in ten years from 20 to 60 tonnes annually, making it the largest producer in the world. The plant extracts vetiver oil by steam distillation. Another major operation in the field is the one owned by the Boucard family. Réunion is considered to produce the highest quality vetiver oil called "bourbon vetiver" with the next favorable being Haiti and then Java. The United States, Europe, India, and Japan are the main consumers. [http://en.wikipedia.org/wiki/Chrysopogon\\_zizanioides](http://en.wikipedia.org/wiki/Chrysopogon_zizanioides)

<sup>34</sup>"Historically handloom has got its predominance and heritages in Bangladesh. The tradition of weaving cloth by hand constitutes one of the richest aspects of Bangladesh culture and heritage. The level of artistry and intricacy achieved in handloom fabrics are unparalleled and unique. The handloom can meet every need from exquisite fabrics of daily use. The industry has displayed innate resilience to withstand and adopt itself to the changing demand of modern times. A manpower of about one million weavers, dyers, hand spinners, embroiderers and allied artisans have been using their creative skills into more than 0.30 million active looms to produce around 620 million meters of fabrics annually. It shares 63% of the total fabric production in the country designed for home consumption. Besides, it provides employment opportunities to a million rural people, 50% of which are female. Another half a million people are indirectly engaged in the industry. It contributes more than 10 billion taka annually to the national exchequer as value addition." <http://www.textiletoday.com.bd/magazine/438>

<sup>35</sup>[http://www.fao.org/fishery/countrysector/naso\\_bangladesh/en](http://www.fao.org/fishery/countrysector/naso_bangladesh/en) <http://en.wikipedia.org/wiki/Tilapia>

<sup>36</sup>Other subsectors explored were 6) Maize and Wheat and Bamboo and 7) Mustak (as Cash Crop and Village Protection), but these are less applicable to landless AHs.

the EMB Crest, there may be an opportunity for training AHs to use it commercially, for oils, food, handicrafts, as well as for fodder.

179. The RP budget will support long-term livelihood development activities. The detailed planning of livelihood activities will be carried out with participation of the local community households. It will be developed on the basis of assessment of community needs, requests, skill and preferences as well as options and opportunities available in local areas whose economy is expected to experience big changes and development with the project.



Livestock – JEMREMP RV-2



Internet Café or Electronics Repair- OE



Internet Café or Electronics Repair- OE



Garden – JMREMP RV-1



Rope Making – JMREMP RV-1



River Net – Jamuna EMB





Poultry - OE



River Net – Jamuna EMB



Boat – Jamuna EMB



Shop – JMREMP RV-1

**Figure 9-1: Potential ILRP Packages**

180. BWDB will engage a national Livelihood Development NGO (LD-NGO) experienced in livelihood development to facilitate community mobilization for the detailed planning and implementation of the long-term livelihood program activities. The LD-NGO will be engaged at the start of the project and immediately start needs assessment during the first 6 months of the ILRP to design long-term income restoration programs (see section 8.3). The rationale for long-term 4 year program is to improve rather than restore pre-project standard of living. The long-term programs will be designed considering the sustainability of income and livelihood based on local resources, skills, and already ongoing established market opportunities.

### 9.3 Short-Term Income and Livelihood Restoration Measures

181. All the persons losing their livelihood resources or places of generating income as a result of the Project will be supported with short-term income and livelihood restoration assistance for subsistence during the transitional period.

182. These short-term income and livelihood restoration measures will be for immediate assistance and include the following measures:

- Compensation for land and other lost assets is paid in full prior to relocation.
- Temporary or short-term employment in construction activities at the resettlement or project construction sites; and
- Special assistance, appropriate to vulnerable groups such as women, the aged and the disabled.

183. In addition to the above, the RP will provide the following short-term assistance for income and livelihood restoration through BWDB with assistance from the implementing NGO:

### **9.3.1 Cash Assistance to Support Lost Income**

184. APs, including those experiencing indirect impacts, will be eligible for assistance for loss of employment/workdays (wage earners) owing to dislocation and relocation. One-time cash grant for a certain number of days will be paid to all such eligible APs. It is expected that the APs would be able to recover their losses and/or find alternative employment within this period. Following are the specific measures in the form of entitlements of APs to support their lost income:

- Tk. 2,500 per affected household (AH)
- or Tk. 3,500 for AH headed by women

### **9.3.2 Employment in the Project construction work, if possible Assistance to Re-Establish Business/Enterprises**

185. All owners of affected businesses will receive cash compensation and cash grant for loss of business premises plus shifting or moving allowance. This assistance is intended to help them re-establish their enterprises in new locations. All APs are likely to continue their previous occupations and commercial activities in new relocated site. In addition, commercial plots will be allotted to some of the intending business-losers in project sponsored resettlement sites on lease basis to re-establish affected businesses. Project assistance to re-establish business/enterprises in the short-term are the following:

- Replacement value of structure at current market price at the time of dispossession including the salvaged structure materials (generally, thatch, bamboo or wooden pieces that could be used as fuel); minus the cost of re-usable materials (such as, tin roof and/or tin wall) taken by the AP for re-building the structure at a new location. Re-usability will be determined/confirmed by the PVAT.
- Transfer Grant of Tk.3,000.
- Reconstruction Grant of TK.10,000 plus plot on BWDB or khas land, if required.
- One time moving assistance of BDT 5,000 for each proprietor of business in rented in structures.
- Grant for Loss of Business @ 5% of DC's payment for the structure.
- One time Moving Assistance of Tk. 5,000 for tenants.
- A commercial plot in the resettlement village, if required, at cost equivalent to CCL

### **9.3.3 Special Assistance for Vulnerable Groups**

186. Both the co-financier safeguard policies and good resettlement practices in Bangladesh stress on the need for special attention to vulnerable groups (female-headed, elderly-headed, disabled households and poor households) during implementation of resettlement program so that resettlement acts as an opportunity which enables improvement of their socio-economic status. Since vulnerable groups are at risk of becoming particularly disadvantaged as a consequence of involuntary resettlement, special assistance would be provided to them to assist in their rehabilitation.

- One time special assistance of BDT 5,000 for each vulnerable household affected by the project.
- Landless vulnerable households will be offered one residential plot each in the project designated resettlement sites free of cost.

### **9.3.4 Employment in Construction Work**

187. The Project construction activities will require many unskilled laborers and skilled staff for earthwork in embankment and construction of the EMB/RBP, offices and management work for a period of about 4 years. BWDB will make provision in the contract with the contractors for employment of qualified APs and their dependents in the recruitment of local labor, including affected women. Employment in the project construction will act as an added source of income in the income and livelihood restoration processes of APs. For the RBP, sand filled geotextile bags are labor intensive, so there will be a great demand for un-skilled laborers, including women.

188. The LD-NGO (with assistance of the INGO) will prepare a list of all capable women workers (from amongst the affected households) and provide the same to local contractors through BWDB. The



supervision/ management consultants shall also monitor this through monthly statements of number of labor employed from the affected people.

189. Local people whose livelihood is impacted by the project will get preference in jobs associated with the project construction. The jobs, in the semi-skilled and unskilled category, shall be offered to the APs on a preferential basis.

### **9.3.5 EMB Plantation and Social Forestry**

190. Huge plantation work will be required to develop the resettlement sites and the EMB slopes. These are the tested areas for employment of the rural destitute women by NGOs and the DOF of the government. Affected women, who are particularly vulnerable, will be employed to these jobs.

191. BWDB, with the help of LD-NGO and INGO, will organize plantation programs by engaging affected women and other vulnerable groups from the local poor of human resources preferably the affected population. Selection of tree species, design, plan, and other technical support (for example, training) for the EMB plantation will be as per Environmental Management Plan (EMP) involving BWDB and other appropriate agencies, including Departments of Forestry/Environment of GoB.

### **9.3.6 Long-Term Income & Livelihood Restoration Plan**

192. Long-term income & livelihood restoration plan (ILRP) for post-relocation activities will be designed and implemented over a period of 10 years. This is a post relocation intervention for sustainable livelihood program. Under the guidance of a national level LD-NGO, local NGOs, and the INGO will be involved for fostering the ILRP activities among the deserving APs. The ILRP will be designed through identification of target group beneficiaries (TGBs) and assessing the needs and feasibility of potential income generating activities.

193. The long-term Income & Livelihood Restoration Plan will be developed for the following categories of project-affected people, eligible as Target Group Beneficiaries (TGBs):

- 1) Eligible members of poor and other vulnerable (women and disabled person headed) households to be relocated as a result of Project construction;
- 2) Poor households or the employees and daily wage earners of the diminished businesses or their nominated representatives;
- 3) Poor households losing access to agriculture land including sharecropper, and leaseholders;
- 4) Poor households losing access to commercial land including business proprietorship;
- 5) Poor households losing more than 10% of their regular income due to acquisition and execution of the project;
- 6) Women entrepreneurs and their association to be organized to establish cottage-type activity and marketing network for the rural products.

194. In order to ensure smooth implementation of the long-term livelihood restoration plan, a Social Development Fund (SDF) will be created by the Project. Allocation for the same has been included in the RP budget. The SDF will be used for extending the following support to the affected households:

- Working Capital
- Capacity building support and human resource cost required implementing the program.
- Business development services
- Market Linkages
- Skill development
- Women entrepreneurs
- Collective Enterprises
- Farm based inputs and extension services when appropriate.

#### **9.3.6.1 Needs Assessment and Feasibility Study for Viable Income and Livelihood Restoration Options**

195. Sustainability of income and livelihood restoration activities depends on local resources, skills, needs and market opportunities. To enable viable livelihood activities, a detailed in-depth Baseline &

Needs Assessment Study, as follow up to the PPTA Chain Value Study (See Annexure X) will be conducted for identification of resources and/or opportunities available, present level of occupation, income generation activities, pattern of trading, small business, and other employment opportunities, needs and aspirations of the affected person.

196. The main objective of this study will be to:

- Analyze the economic activities of all APs (by gender, age group, education, skills, income, household size, preference, options) so as to assess their needs primarily from census data
- Identify multiple income and livelihood restoration programs (both individual and group specific) through beneficiary consultation, market and financial feasibility analysis.
- Explore product-marketing opportunities within and outside the affected area.

197. The study will make a detailed inventory of all possible options and skills available or which can be developed for income and livelihood restoration.

#### **9.3.6.2 Institutional Arrangement for ILRP**

198. BWDB will be responsible for implementation of the ILRP through RU field offices. The Superintending Engineer in charge of the RU at HQs will coordinate the entire process. See Annexure XIV: *Organizational Charts* for more details of the institutional arrangements for ILRP

199. A Livelihood Development NGO (LD-NGO) selected from willing national NGOs, TORs attached, as Annexure III with sufficient experience in poverty reduction activities and linkages with micro-finance institutions (MFI) will be employed to coordinate the ILRP. The LD-NGO will identify local level NGOs having long presence in the area and skills to implement the ILRP. The LD-NGO will guide and build the capacity of local NGOs for effective implementation. The entire focus will “result based” and on achievement of results. Mere completion of activities shall not be considered as the indicator of success. The LD-NGO will also establish linkages with MFI and vocational training institutions, to extend all possible business development services and inputs to the affected persons. During implementation, detailed business plans will be developed for each activity to further establish its viability and sustainability. After completion of income and livelihood restoration program, the local NGOs will support the local communities for capacity building ensuring sustainability of the various programs. Annexure X provides a proposed management set up of ILRP component, based on the PPTA’s April 2013 Chain Value Report.

200. The Construction Supervision Consultant (CSC) will assist BWDB in supervising and monitoring the activities of the LD-NGO and the NGOs at the field level. The External monitor will monitor the overall implementation approach, process and outcome of the ILRP. In addition, difficulties experienced by the LD-NGO & NGO in program implementation as well as the lapses in notifying the BWDB for taking corrective measures on time shall also be monitored and looked into.

## **10 Institutional Arrangements for RP Implementation**

### **10.1 Introduction**

201. Bangladesh Water Development Board (BWDB) under the Ministry of Water Resources (MWR) is representing the Government of Bangladesh as the Executing Agency (EA) of the Main River Flood and Bank Erosion Risk Management Program (FERMIP). BWDB is responsible for undertaking all studies, design, and construction of the Project. BWDB is mandated to undertake steps, as per guidelines of the MWR and advice of the Government, to secure required funds both from external and internal sources for the implementation of the Project.

202. The Deputy Commissioner (DC) of concerned districts will assist BWDB in acquiring land. In addition to engineering construction contractors, BWDB will also engage NGOs and agencies for implementation of safeguard plans including EMP, RP, and GAP, as well as monitoring and evaluation of these plans. The NGO for implementation of the RP (RP-INGO) will be engaged by BWDB in due course.

### **10.2 Institutional Framework for RP**

203. The Project Management Office (PMO), headed by a Project Director (PD), will be set up within the BWDB for execution of the FERMIP. A Resettlement Unit (RU) will be established within this PMO, which is responsible for implementation of the RP – compensation disbursement and resettlement of the project affected peoples (APs) including livelihood restoration and gender equity management in the process of construction of the embankment (EMB) and riverbank protection (RBP) and resettlement of APs.

204. BWDB will be taking assistance from DC of concerned districts for acquisition of land for the Project. The Centre for Environmental and Geographic Information Services (CEGIS) has been engaged for computerization of land acquisition data with GPS reference. CEGIS will be engaged for necessary surveys and verifications for preparation of RP. The RP-INGO will be mobilized for implementation of the RP at the field level.

205. Services of a national experienced livelihood development NGO (LD-NGO) will be utilized by BWDB in design and implementation of a livelihood and income and livelihood restoration plan (ILRP) within the framework of the RP as outlined in Chapter 8. Gender issues will be addressed through implementation of the gender action plan (GAP). The LD-NGO will be employed for implementation of the ILRP while the RP-INGO, the CSC and the Construction Contractors will cooperate in respective areas for effective implementation of the said plans.

#### **10.2.1 Roles and Responsibilities**

##### **10.2.1.1 Role of Project Director**

206. The Project Director (PD) – BWDB has the overall responsibility of the Project and is responsible for following:

- Overall implementation of the resettlement program as per the RP and the agreements signed with the ADB.
- Effecting necessary policy, administrative and financial decisions and actions, necessary for the successful implementation of the RP, as per GOB decisions.
- Timely release of necessary funds to the Resettlement Unit for implementation of the resettlement program, as per the approved implementation schedule.
- Delegating responsibility and powers to Chief Resettlement Officer (CRO) to the level of senior Executive Engineer, to head a separate Resettlement Unit (RU) at PMO for smooth implementation of the RP.

207. The PD is the chief executive of PMO-FERMIP. The PD is responsible for necessary policy, administrative and financial decisions and actions for effective and timely implementation of the Project

as per the approved policy and implementation arrangements. PD may delegate his/her power through the Superintending Engineer (CRO – Resettlement), heading RU for overall management & implementation of the Resettlement Plan (RP), and a Gender Action Plan (GAP).

#### **10.2.1.2 Role of Resettlement Unit (RU)**

208. BWDB-RU will be stationed at PMO in Dhaka. Concerned field divisions under the guidance of the CRO will handle cases of Upazillas separately. The main task of the Resettlement Unit, under the SE-Resettlement, shall comprise of the following:

- Overall planning, management and monitoring of the Land Acquisition Plan (LAP), Resettlement Plan (RP), Gender Action Plan (GAP), and the Income and livelihood Restoration Program (ILRP).
- Synchronization of resettlement activities with the construction schedule of the Project;
- With the help of the RP-INGO, design and set up necessary computer and software facilities necessary for preparation of ID cards, automated loss, entitlement and payment files of individual EPs so as to effectively monitor and evaluate RP implementation;
- Ensure that all eligible persons are identified, provided with their respective entitlements (as per to the resettlement policy/package) and are relocated/resettled as per the implementation schedule, in time, with minimum hardships;
- Liaise with the DCs' offices for the timely acquisition of land required for FERMIP and payment of compensation and ensure that these activities are completed as per the planned schedule;
- Ensure that all APs are informed about their entitlements and provided with ID cards as a proof of their eligibility to resettlement benefits;
- Form a Grievance Redress Committee (GRC) and ensure its smooth functioning, including disposal of grievances;
- Monitor the effectiveness of entitlement packages and delivery mechanism and, if necessary, propose modifications to BWDB management;
- Prepare Terms of Reference (ToR) for Resettlement Implementing NGOs/Agency (RP-INGO) and other agencies that are to execute specific components of resettlement implementation on behalf of the BWDB–RU
- Select and appoint such agencies to implement and monitor progress and take remedial action against slippages.
- Prepare monthly and quarterly progress reports for BWDB Management as well as the ADB;
- Prepare Terms of Reference (ToR) for a “Post Resettlement Survey” as well as select and appoint appropriate agency to execute these survey(s).
- Propose to BWDB any remedial action needed, based on a Post Resettlement Survey results,
- Payment of additional grant for replacement land purchase, house/business reconstruction grant, and dismantling and removal assistance and all other assistances in cash or kind, as stipulated under the resettlement policy, to all the eligible APs;
- Develop the proposed resettlement villages (RVs) for housing and businesses with civic amenities and services
- Devise procedures for allotment of housing and commercial plots through concerned BWDB field division and RP-INGO;
- Propose establishment of PVAT to determine realistic replacement costs of land, structures, trees and crops and accordingly recommend prices/rates for all types of losses incurred by the APs;
- Update, if required, a Land Market Survey to determine the replacement cost of land in and around the project area and accordingly recommend Maximum Allowable Replacement Value (MARV) for replacement land
- Identify and plan resettlement measures for EPs who have already vacated their lands;

- Co-ordinate with related agencies regarding possible adverse impact on population as a result of changed river regime and where necessary assist BWDB to design and carry out mitigation measures;
- Arrange afforestation programs on BWDB surplus land, RVs, and embankments with the help of Forest Department and/or NGOs, involving poor & vulnerable APs;
- Negotiate with Contractors for providing preferential employment to APs in the construction activities;
- Prepare area development programs including expansion of community facilities such as education, sanitation, health, drinking water supply etc. in the Resettlement Villages (RVs);
- Study and monitor unforeseen adverse effects during and after construction and take necessary mitigation measures;
- Liaise with other government and non-government agencies in the country, on matters of mutual interest, related to resettlement.

#### **10.2.1.3 RU – Role CRO**

209. The CRO will be the head of the RU in BWDB and will work under the overall guidance and supervision of the Project Director/Executive Director. The CRO will be directly responsible for executing all tasks assigned to the RU and any other tasks assigned to him/her by the Project Director (PD) from time to time. The CRO will be assisted by the required number of Assistant Engineer(s) at PMO and field divisions for the resettlement operations. The CRO, as the head of the resettlement unit, will be responsible for:

- Preparation of job descriptions of Assistant Engineers at PMO and field offices, delegate tasks, responsibilities and powers to them, and supervise and monitor their work;
- Plan, organize and manage the implementation of Land Acquisition Plan (LAP), Resettlement Plan (RP), Gender Action Plan (GAP) and Income and livelihood restoration program (ILRP) in consultation with other participating agencies and in accordance with the agreed time schedule.
- In consultation with the PD deploy NGOs and other participating agencies, contract specific tasks and activities with them and ensure that these agencies carry out and complete activities as per the agreement with BWDB and within the agreed time schedule;
- In consultation with the PD, negotiate and finalize contract with micro-financing institutions, operational modalities of credit schemes, implement that as part of the ILRP and ensure that such arrangements and agreements are working;
- Identify and bring to the notice of the PD – any policy, administrative or financial actions that are necessary at PMO level for smooth implementation of RP;
- Ensure that the funds necessary for carrying out resettlement activities in the field are released to field offices, RP- INGO and other agencies (as assigned with resettlement tasks) on time and such activities are carried out without any administrative hindrances;
- Closely monitor the implementation of LAP, GAP and ILRP and propose modification/improvement to BWDB and to the ADB, as necessary;
- Submit comprehensive periodic progress reports to BWDB Management and through them to GOB and the ADB.
- The CRO will also have full administrative and financial powers to manage the resettlement program in all matters including the following:
  - (i) Administrative control of all officers and staffs of the RU, and
  - (ii) Will exercise the full financial powers in following matters related to resettlement project/Unit, subject to availability of fund and with PCP/PP provision for CRO:



- a. Regarding finalization of tenders of resettlement project, the PD will form tender evaluation committee (s) in line with the GoB procurement policy and process the selection and award.
- b. All kinds of bills related to the resettlement program will be finalized and approved by CRO and payments will be made through cash/check by Regional Accounting Center (RAC).
- c. The Resettlement Project Accounts section will assist CRO in the process of finalization and approval of these bills. For reconciliation of accounts, a quarterly meeting will be held with Resettlement Accounts section and RAC. The same will also be audited annually.
- d. Salary and allowance of officers and staffs either deputed or recruited in RU will be prepared and passed by CRO.
- e. Specific civic amenities in host areas, as necessary, as per design plans.

#### **10.2.1.4 Role of Field Executive Engineer - Resettlement**

210. Executive Engineers will be the field level-implementing officers of the Resettlement Unit responsible for field level coordination of the resettlement operation in concerned districts. The RU-field Offices will be located in concerned districts and shall have the responsibility for the overall implementation of all field level operation related to resettlement.

211. The key functions of the Executive Engineer at the field office level would comprise of the following:

- Planning and implementation of Land Acquisition Plan (LAP);
- Planning, implementation and monitoring of RP, GAP, and ILRP;
- Issuance of ID Cards to all eligible persons (EP);
- Provide necessary assistance for purchase of replacement land;
- Ensure that all EPs are relocated on time and are provided with the Transfer Grant in cash and or in kind;
- Identify eligible EPs who need to be allotted plots at RVs;
- Organize grievance redress committee (GRC) meetings;
- In consultation with DC and local leaders, organize meetings in host area villages to persuade and encourage the host population to provide replacement lands and settlement sites to APs;
- Sanction and provide various cash grants planned under the RP to entitled persons (EPs) and ensure that these grants are made available as per the system defined in the RP;
- Selection of homestead losing EPs for temporary settlement on khas land or surplus land (only in addition to their other entitlement);
- Provide hard copies of draft and final EP file, EC and Payment Statement to respective EPs
- Liaise with the RP-INGO and ID-NGO for the effective implementation of information campaign, vocational training, income and livelihood restoration and other activities delegated to them.
- Maintain close contact with PMO and submit monthly/quarterly progress report on Resettlement implementation
- Supervision of civic amenities at RVs;
- Effective management of site offices and timely implementation of the directives.
- Develop a system of verification of all land transactions and ensure that the revenue officer follows the prescribed process in case of each transaction.

#### **10.2.1.5 Functions and Powers of Assistant Engineer-Resettlement**

212. The main function of Assistant Engineer- Resettlement will be as follows:

- Maintaining close contact with APs, informing them about their entitlements and resettlement benefits, verifying claims and grievances and accordingly take necessary action or inform the Deputy Director.
- Promptly bring to notice of CRO on matters of urgent nature.
- Closely monitor migrating APs to the host areas.
- Organize squatters and uthulis for their settlement at RV site or elsewhere.
- With the help of *Kanungos*, demarcate plots in surplus land and khas land.
- In consultation with Forest Officer, demarcate areas for plantation.
- Supervise, monitor and evaluate the training programs of NGOs.
- Demarcate plots on RV sites.
- Ensure that all legal and administrative formalities necessary for disbursement of entitlement are completed as per the RP.
- Supervision of construction of civic amenities in RV and, if necessary, in host areas.
- Submit regular progress reports to the Executive Engineer.

#### **10.2.1.6 Functions of Sub-Assistant Engineers**

213. The main function of the Sub-Assistant Engineers will be to:

- Liaise with the ADC – Land and NGOs to ascertain land purchase by the EPs;
- Through the RP-INGO contact and supervise the activities of resettlement workers; and
- Monitor and resolve the problems arising out of migration of APs to host areas, if any.

#### **10.2.1.7 Role of Livelihood Development NGO (LD-NGO) and Implementing NGO (INGO)**

214. **LD-NGO.** Livelihood Programs are difficult to design and implement. For this, FERMIP will contract a national-level experience LD-NGO that will coordinate and supervise local partner NGO-micro-finance institutions (MFIs) in carrying out a *demand study*, design tailored livelihood program and implement them over a 4 year period for Tranche-1, while preparing similar programs for Tranche-2.

215. **INGO.** It has now been generally recognized that the task of successfully implementing a RP requires special attitude, experience and skills in dealing with the grassroots level people, which are available among some reputed NGOs in the country. Therefore, it has been adopted as a government policy to commission the services of such an NGO to assist in the implementation of this RP. The principal task of the RP-INGO would be to identify the project affected households/business enterprises and persons relating to the enterprises, estimating their losses and dislocations, and processing their entitlement as per the packages. The next main task would be to assist BWDB in disbursing entitlements, which are outside the purview of CCL. The RP-INGO would also play an important role in addressing legitimate grievances of the APs and vulnerable groups.

#### **10.2.1.8 Role of Project Consultants**

216. Resettlement specialists of the Construction Supervision Consultant (CSC) Team, acting on behalf of the Project and BWDB, will ensure that sound methodologies and practices are followed in the implementation of RP. The consultants will advise on any changes in the modalities of the implementation work, participate in meetings with the contracted agency/NGO and BWDB, and monitor the work of the implementing NGO/agency in the field. The consultants will also review, on behalf of CRO, the implementation progress report, submitted by the contracted NGO/agency, on a regular basis.

#### **10.2.1.9 Role of External Monitoring Agency**

217. Except internal monitoring and evaluation by the EA for land acquisition and resettlement, an external monitoring agency (EMA) will be engaged through competitive bidding process to undertake resettlement supervision, monitoring and evaluation for the land acquisition and resettlement implementation. EMA will carry out observation of the resettlement program and implementation and

submit an external monitoring and appraisal report of the RP implementation to the PMO, BWDB and to the ADB.

#### **10.2.1.10 Resettlement Management Committees**

218. RP implementation will be participatory with representation from the government, local elected representatives, community and the affected persons. Selected representatives from appropriate stakeholders will be absorbed in various resettlement management committees. A Joint Verification Team (JVT) will be formed to carry out the physical verification. Moreover, a Property Valuation Advisory Committee (PVAT) at the Upazila level will be formed for determination of replacement market value of land and assets for compensation. A Grievance Redress Committee (GRC) for each field division will be formed for addressing grievances of the affected persons in the resettlement process. In order to ensure collective sharing of responsibilities, PVAT, GRC and JVT be formed with representatives of the BWDB, Consultant and representatives of the LGI through administrative order of the MoWR with appropriate legal authority. Formation, roles and responsibilities, and the mandates of the committees proposed are presented below:

219. The BWDB will form a Joint Verification Team (JVT), for the project through a gazette notification to compare and review the physical verification data collected, comprising a representative from BWDB – Convener (SDE/AE/Equivalent officer); a representative from concerned Upazila – Member; and a representative from the INGO – Member secretary. The JVT will be approved by MoWR. The JVT will determine the loss items and their owners, the Entitled Persons (EPs). These include users with title to the land as well as non-titled but socially recognized user. The scope and responsibility of the JVT will be clearly defined in the gazette. The INGO will process the entitlements of the project affected persons using the JVT data as one of the determinants

#### **10.2.1.11 Property Valuation Advisory Team (PVAT)**

220. Given that compensation levels are often inadequate in reflecting RVs, it is necessary to form Property Valuation Advisory Team (PVATs) to (i) provide guidance for the valuation of properties at replacement cost, and (ii) recommend the replacement value to the Government of Bangladesh (GOB) for approval. The Executive Director (ED), BWDB /Secretary, MoWR, will authorize the formation of PVATs in each of the field divisions covered by the FERMIP's Tranche-1. The PVATs, which should record proceedings of all their deliberations, shall comprise the following:

221. The CSC will assist the PVATs by providing technical expertise in assessing the RVs for properties (land by type and mouza, structure by basic construction type, trees by broad species-type, and crops by type. DTC will undertake consultations, as needed, with affected persons and host populations to obtain adequate information about property values, and review, as needed, past reports on replacement value. For land, DDC will seek to reconcile those values with the land market survey data obtained under the census surveys conducted by CEGIS.

222. The PVATs will review and verify, as needed, through additional field investigations, the replacement values assessed by type in all three districts will be submitted to MoWR for approval. The difference between CCL and replacement cost (RC) will be paid by BWDB to the eligible persons (EPs) with the assistance from the RP -INGO.

#### **10.2.1.12 Grievance Redress Committee (GRC)**

223. In dealing with a large number of affected persons, disputes on entitlement processes are very likely to arise due, for example, to gaps in legal/land records systems and need for updated titles of holdings during project implementation. Experience from past projects shows that there are often (i) fraudulent authorization and "no-objection" documents; (ii) errors in establishing inventory of losses (IOL); (iii) cases of dispute over ownership such as an earlier owner receiving an award even after the sale of land prior to acquisition; (iv) issues related to Government vested property, and (v) other socially and legally identified owners. Also, there may be issues arising out of environmental impacts and mitigations.

#### **10.2.1.12.1 Objectives of GRC**

224. To deal with resettlement related disputes and to make the project accountable to the affected people, a two-tier GRC will be established. First, GRC at the local level consisting of local representatives of the affected people, project staff, and local government representatives and INGO will receive cases and will resolve locally within a defined timeline. Cases which are not satisfactorily resolved or affected persons have grievances; will be forwarded to a project level project level GRC. The decision by the project level GRC will be binding on the Project.

225. Local level GRCs will be established in the project area in each Union Parishad. Thus the GRCs will officially recognized community based body to resolve disputes arising out of various matters related to SAP and EMP. The fundamental objectives of GRCs are to resolve any resettlement-related grievances locally in consultation with the aggrieved party to facilitate smooth implementation of the social and environmental action plans. Another important objective is to democratize the development process at the local level and to establish accountability to the affected people.

#### **10.2.1.12.2 Procedures for Filing GRC Cases and Documentation**

226. APs will be able to file their grievances without any fear and intimidation. Where required, the RP-INGO will assist the APs in drafting the grievances. All grievances must be submitted in writing to the Chair, GRC. The complainant may be represented by the AP him/herself or appointed agent such as locally elected officials/legal advisors. The judgment made by GRC will be communicated to the concerned AP in writing. If dissatisfied, and with the agreement of the GRC, the AP may request a further review of the judgment of project level GRC. In such cases, the case will be reviewed at PMO with all documentations. If the disputant still remain unsatisfied, he/she can go to the formal court of law. Therefore, in this project the affected persons have multiple options to deal with grievances regarding resettlement issues. GRC procedures and operational rules will be publicized widely through community meetings and pamphlets in Bangla so that APs are aware of their rights and obligations, and procedure of grievance redress. All field GRC documents will be maintained by RP-INGO for review and verification by ADB. The BWDB Field Office(s) will act as the Secretariat to the local GRCs. As a result, the records will be up to date and easily accessible on-site.

#### **10.2.1.12.3 Approval of GRCs and Entitlements of GRC Members**

227. All GRC members will attend a training and orientation meeting prior to commencement of their work. The training will be conducted by Project staff and the CSC's resettlement experts.

228. The GRC members (except for BWDB and RP-INGO representatives) will be entitled to Tk. 300/- (three hundred) per day as honorarium from the implementing NGO budget (i.e., reimbursable head). Light snacks/refreshments will be provided during the meetings under the NGO budget. In case of day-long meeting, GRC members may also be served lunch. Necessary stationery and other logistics will be made available by the RP-INGO.

### **10.2.2 Capacity Building for Resettlement Management**

229. There is a need for an efficient organizational set-up for involuntary resettlement management. The key organizations/agencies responsible for implementation of RP involve:

- BWDB as the Executing Agency (EA) for the Project
- Deputy Commissioner(s) of the concerned districts
- Department of Fisheries, Forestry, Agricultural Extension, Cooperative, Upazila administration and Banks,
- Local Government Institutions like Upazila Parishad and Union Parishad which represents the
- APs in all forums in connection with land acquisition, resettlement and income and livelihood restoration;
- Experienced NGOs/Institutions/Consultants for assisting BWDB for RP implementation, income and livelihood restoration and need based surveys and services and internal monitoring; and

230. Participation of these organizations/agencies is important to implement a time-bound (i) Land Acquisition Plan, (ii) Resettlement Plan (iii) Gender Action Plan, and (iv) Income and Livelihood Restoration Program. In order to build capacity of these bodies, specific terms of reference, legal/administrative authority, intensive training/orientation focusing on the tasks and responsibilities, are considered imperative.

231. The CSC will conduct training on resettlement management for capacity building of the agencies, e.g., RU, DC/Local administration, and GRC members) for effective implementation of RP. The training will include ADB involuntary resettlement safeguard policy and principles and will specifically focus on the differences between the provisions of the ADB policy and the relevant Bangladesh laws. The awareness of these differences and the need to follow the provisions of the ADB policy are critical for successful implementation of the RP. The SCS will also conduct briefing on RP and implementation issues with the RP-INGO prior to mobilization and resettlement implementation. At the BWDB level, some capacity building initiatives – for example, analysis of existing capacity, staff skills, staff development and training needs – the CSC's Social/Resettlement Advisor to BWDB will conduct short-term resettlement management training and workshops involving related agencies and field staff dedicated to RP implementation. In addition, a set of operational guidelines and a handbook will be prepared to guide the field staff for consistent applications of the policies and practices.

### 10.2.3 Implementation and Monitoring Database

232. The CSC, with assistance from concerned agencies, will establish a complete electronic databank and document archive as the key source of information on all resettlement-related data for implementation and monitoring purposes. CEGIS, which was hired for conducting the census and land market survey, has established an inventory of losses and a cut-off date for entitlement eligibility. The database prepared by CEGIS will provide assessment of losses and price of all types of land in all the affected mouzas.

233. CEGIS) will be engaged to assist the CSC for providing technical services for the tasks. CEGIS will collect satellite images of the affected area, digitize mauza maps, and establish a geo-referencing system to ensure that the database is accurate and there is no manipulation of information and subsequent abuse of the policy framework. CEGIS will also provide software and prepare program for entitled persons (EPs) files on individual households for checking and verification purposes. The file will contain detailed socio-economic data on individual EPs, lost assets, compensation entitlements and payments, and relocation and resettlement status. The databank will enhance institutional capacity of BWDB/Field Offices and the RP-INGO in resettlement management and operations of the Project.

### 10.2.4 RP Implementation Schedule

234. A time-bound implementation schedule is presented in Figure 10-1. The overall schedule of implementation is based on the principle that (i) all affected households are paid their due compensation and other benefits/allowances prior to relocation; and (ii) relocation of the households/businesses will be synchronized with the schedule. The activities listed concern vacating lands for EMB, RBP and resettlement activities – for example, payment of additional grant over CCL to reach replacement value, income and livelihood restoration activities, and social development for vulnerable groups.

235. This *Provisional Implementation Schedule* is based on the probability that there will be a 'Bridging Period',<sup>37</sup> beginning after the 2013 Monsoon until the Loan Agreement, which will be likely in June 2014. During the Bridging Period, this implementation schedule will be updated and revised, possibly with involvement of a procurement specialist to stagger contract packages so that the first construction activities begin with areas where there is no structure dislocation and starting with segments that have only agricultural land acquisition, such as the Rehabilitated Hurashagar-Baral Embankment. Note that Figure 9-4 starts with Hurashagar-Baral Embankment and shifts to the New Jamuna Embankment after the first Rainy Season (shaded columns). If there is a Bridging Period, the

---

<sup>37</sup>Reference: Aide Memoire: Subject PPTA-8054 BAN: Main River Flood and Bank Erosion Risk Management Program – Follow-up Actions for the TA Review Mission (5-12 April and 25 April – 6 May 2013).



Provisional Implementation Schedule assumes land acquisition will have been processed by the District Commissioner (DC) by June 2014. The proposed resettlement activities for the Bridging Period are shown below (Table 10-1):

**Table 10-1: Proposed time frames for Resettlement Activities<sup>38</sup>**

#	Activity/Issues	Time Frame	Responsibility
1	Updating the RF upon review by the BWDB. ADB review to follow for concurrence. GoB approval	May 2014	PPTA consultants; BWDB; ADB
2	Completing and updating the RP. ADB review to follow for concurrence. GoB approval.	May 2014	PPTA consultants, BWDB; ADB
3	Stake out the affected land (both BWDB and privately owned) based on Detailed Engineering Design (DD)	After 2014 Monsoon	BWDB
4	Notify GoB's intention of land acquisition (LA) under Section 3 of the 1982 LA Act.	Preferably Sep 2014	Deputy Commissioner (DC)
5	Carry out a detailed measurement survey (DMS)	Oct-Nov 2014	BWDB with consultants
6	Project census and socio-economic survey database to be transferred to BWDB and the latter trained on managing the database	July 2014	PPTA consultants
7	The formation and agreed member composition of the Joint Verification Team (JVT), Property Valuation Advisory Team (JVAT) and the Grievance Redress Committee (GRC).	By Nov 2014	BWDB; GoB gazetting
8	Formal disclosure of the resettlement activities to the APs by carrying out public meetings	Nov 2014	BWDB; DC
9	When Development Project Proposal (DPP) is approved by GoB, the LA activity should commence immediately	Nov 2014	DC; BWDB
10	Prepare a land acquisition plan (LAP) based on the DD, with affected asset on a 1:500 scale map	Oct-Dec 2014	Prepared by DC office, but practically with the assistance of BWDB staff.
11	Carry out joint verification of the affected land plots and other assets	Dec 2014	BWDB; DC; preferably with a representative of the APs
12	Inputs (intermittent) of a resettlement specialist as ADB's staff consultant for handholding assistance to ADB and BWDB and for ensuring all procedures meet ADB's requirements. TOR to be prepared by ADB in consultant with BWDB	Oct 2014-Jun 2015	ADB; BWDB
13	NGO or any other specialized agency may be recruited for implementing the RP as an advanced action of Tranche-. Retroactive financing may be considered.	1 <sup>st</sup> Quarter 2015	BWDB
14	TOR for RP-INGO to be finalized (Draft TOR appended to RP)	Nov/Dec 2014	PPTA consultants; BWDB; ADB
15	RP-INGO to update the database on the LAP and update the RP	Mar/Apr 2015	RP-INGO
16	DC's award of compensation to titleholders	May/June 2015	DC
17	BWDB transferring funds to DC's account for making compensation	May 2015	BWDB; DC
18	For the titleholders – after the DC makes his award and compensation (CCL) is paid, the RP-INGO will work on the basis of DC's documentation for preparing the replacement cost (RC) amounts, as recommended by the property valuation advisory team (PVAT)	June/July 2015	DC; RP-INGO
19	For non-titleholders, the RP-INGO can start work right away, arrange for making payment for the compensation for the loss of structures (where relevant) and paying for rehabilitation assistance, and work for their relocation.	April/May 2016	RP-INGO; BWDB
20	ADB's Staff Consultant Resettlement Specialist revises Provisional Implementation Schedule to estimate the beginning of construction, at which point BWDB can hire a Livelihood Development NGO (LD-NGO) <sup>39</sup> and commence with the developing a detailed ILRP and begin implementation.	Oct 2014-Jun 2015	Staff Consultant; BWDB
21	ADB's Staff Consultant Resettlement Specialist explores with	Oct 2014-Jun 2015	Staff Consultant; BWDB; ADB

<sup>38</sup> Time Frames may change; especially for Item 4,7,8 and 9.

<sup>39</sup>To be eligible, the NGO(s) will have to have (i) a partnership relationship with the Palli Karma Shahayak Foundation, PKSF, (a semi-autonomous public organization providing microcredit financing at low interest rates to the local NGOs/Microfinance Finance Institutions, calling Partner Organizations of PKSF, to operate microcredit for the grass roots poverty alleviation, registered under the Microfinance Regulatory Authority, MRA), (ii) at least five years of experience in implementing livelihood development programs (LDPs) for poor assisted by external funding agencies with satisfactory implementation records, (iii) demonstrated capacity to mobilize the required staff and (iv) must be not-for-profit NGO(s) either in case of single or collaborative bidding (joint venture or association).

	<i>Palli Karma Shahayak</i> Foundation (PKSF) the feasibility of PKSF managing the funds for ILRP as well as FERMIP's Community-based Flood Risk Management (CbFRM) livelihood initiative, so that a FERMIP livelihood revolving fund may be established that would allow ILRP/CbFRM activities to continue beyond FERMIP Tranche-1's 4 year life.		
22	ADB's Staff Consultant Resettlement works with an appointed Procurement Specialist to design a procurement plan synchronized with resettlement activities prioritizing contract packages that start in areas where there is no physical displacement of APs.	Oct 2014-Jun 2015	Staff Consultant; BWDB; ADB

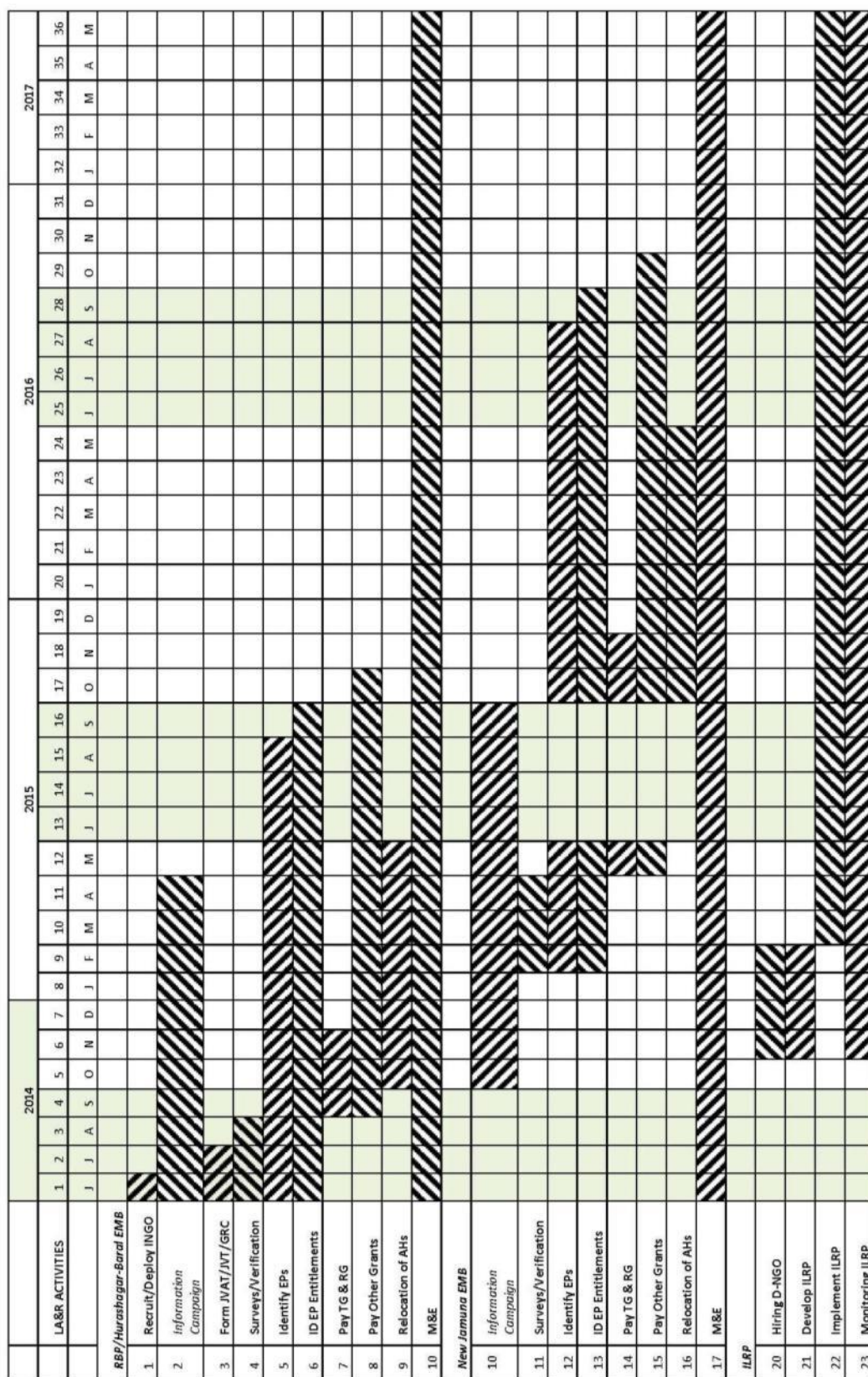


Figure 10-1: RP Provisional Implementation Schedule, 2014-2017 (Shaded Columns = Rainy Season)

## 11 Relocation, Site Development and Resettlement

### 11.1 Displacement and Relocation

236. All necessary efforts have been made so as to minimize the Project impacts and to reduce impacts on assets and disruption of livelihood. In order to minimize impacts to the maximum possible extent, adequate provisions have been incorporated into the planning and design of the Project to minimize or mitigate any unavoidable impacts. Technical and Social team has worked closely to reduce the social impacts of the Project by means of both design adaptation and innovative technical solutions (see Chapter, Minimizing Impacts). As a result the displacement impact has been reduced as far as possible. Despite this the realignment of the 12.56 km New Jamuna EMB, 10.44 Km Rehabilitated Hurashager/Baral EMB and the 1 Km New Jamuna RBP will displace about 650 AHs.

### 11.2 FERMIP's Approach to Relocation, Site Development and Resettlement

237. FERMIP's approach to relocation, site development and resettlement will be modeled on the JMREMP experience (See Annexure XIII: *The Jamuna-Meghna River Erosion Mitigation Project (JMREMP) Approach to Relocation, Site Development and Resettlement*). The PPTA has sought low-lying areas, especially sand-cast or breached, in proximity of AP population clusters along the EMB/RBP that can be bought for less by APs through support of FERMIP's Construction Supervision Consultant (CSC) resettlement staff, the INGO, Local Government Institution (LGI) representatives. As with JMREMP, the FERMIP will encourage self-relocation. But FERMIP will also consult with APs on potential RV locations, in particular the ones so far identified by the PPTA. FERMIP will also conduct field trips to JMREMP's RV-1 and RV-2 to so that EMB/RBP Tranche-1 APs will have firsthand knowledge of JMREMP AP's experience of relocation to the resettlement villages.

238. As with JMREMP, the RP-INGO will assist APs to jointly purchase their RV plots using their relocation grants (RBs). Land acquisition will be avoided as much as possible, but there will be some land acquisition for access roads (which will be as short as possible) and from excess AP plots for civil amenities, including tube wells, water-seal latrines and electrification. The layout of the RVs and plot distribution will be decided by the APs with assistance of BWDB, which will raise the RV platforms with Jamnua River dredging and construction of the community amenities. During JMREMP RV platforms were raised by AP hand labor, which was a labor windfall, so this will also be reviewed as an alternative possibility. For self-relocation, BWDB will assist as far as feasible (depending on location) raising individual plots with sand dredging (See Figure 11-1).



Small Scale Dredging



Small Scale Dredging



Large Scale Dredging



Large Scale Dredging

**Figure 11-1: Example of River Dredging, at JMREMP RV-1, May 11, 2013**

239. Dredged river bed material will be used for the embankment fill, so dredging for building the resettlement villages will be an extension of the construction of the embankments. This will make the option less expensive than it would have been, because the equipment will already be in place.

240. The ILRP will have provision for O&M of EMB sluices which will help prevent rainfall flooding on the country side of the EMBs, as well as maintenance and benefit of social forestry and fodder grass on the EMBs, assisting livestock and dairy initiatives, while protecting the EMB's structural integrity from other squatters cutting platforms into the new and rehabilitated embankments --weakening them -- to build their houses on an elevation less prone to flooding.

241. FERMIP's ILRP will assist, after local consultation, APs to establish fish (most likely tilapia) ponds in the low lying areas adjacent to the RVs and expand the platform to accommodate areas for local industry, such as hand looms and dairy collection areas. Members of Association of the Women Entrepreneurs will be privileged in distribution of plots. The women will be organizing cottage-type industry and marketing of the homemade products to generate employment and income for them as well as other women residing in the RV. A few plots will be kept for organizing community level livestock in a large sheds. See Section 9 Income and Livelihood Restoration Program for more on income and employment generation for women.

### **11.3 Potential FERMIP Resettlement Village Sites**

242. When the Jamuna EMB was breached and eroded in the 1990s, the Hurashagar Flood Control, Drainage, and Irrigation (FCD) Project became inoperable. The PPTA Team looked for low-lying areas that seem to have been caused by the river breaches that are under water for most of the year and less used for agriculture than higher lying areas. For this, the Team used Google Earth, which allows historical images (Figure 11-2).

243. Based on this methodology, and clustered populations were identified and the proposed RV sites identified, as shown below in Figure 11-2. Based on JMREMP RV experience, it was determined that each of the three 'breach-located' RVs will need an area of about 2.5 ha, roughly 2.5 acres per AH. Alternatively, there may be more resettlement villages with sites of varying sizes, closer to smaller population clusters. The following Table 11-1 is for illustration only.

244. The OE's borrow pit is a fourth RV potential site, as discussed above in chapter 2.2.1 *The 2 Km Old Embankment (OE)*. Figure 11-3 below shows the future design configuration of the OE. The new OE configuration will shift the center line by 10-12 meter towards the R/S slope. Shifting to the R/S will not require land acquisition as the shift will still be within the original 75 m RoW. The existing settlements on the berm will be shifted to the Borrow Pit, filled in with dredged sand from the Jamuna River.



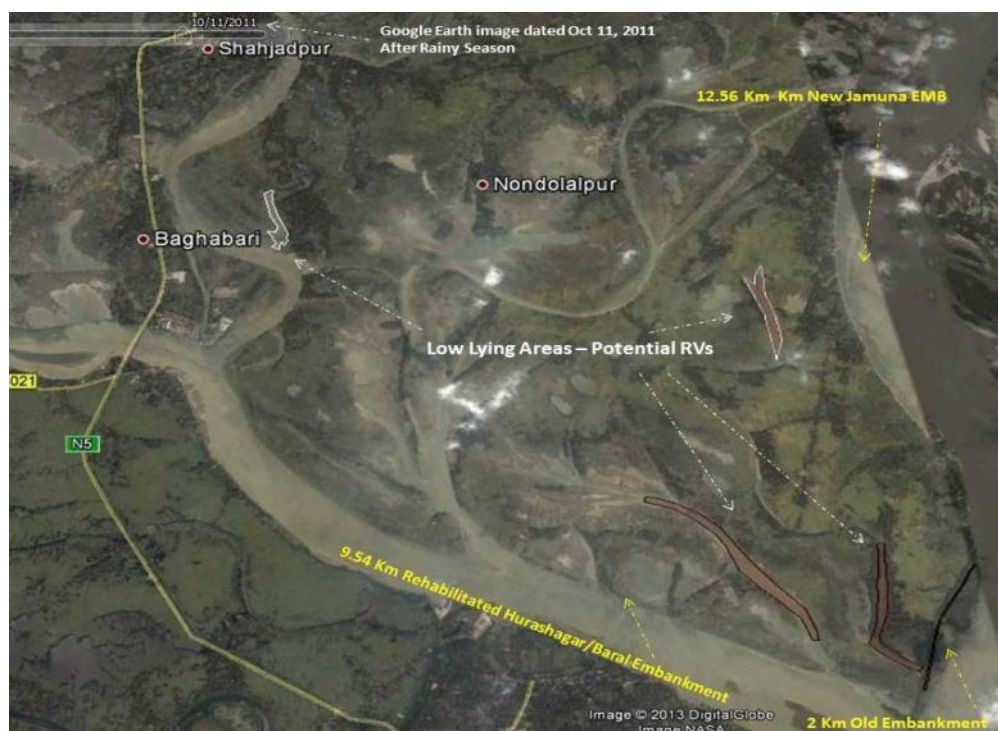


Figure 11-2: Google Earth Image of FERMIP Area, Late Rainy Season, Oct 11, 2011 – For Illustration Only

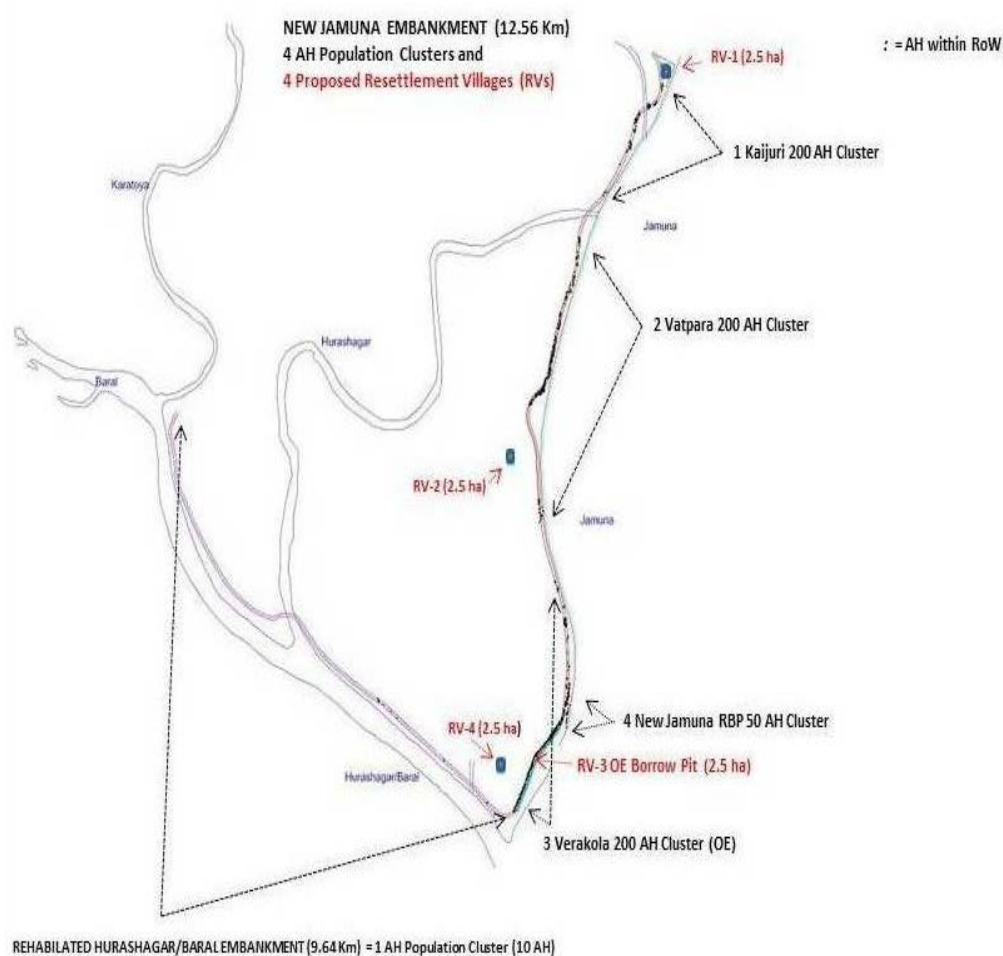
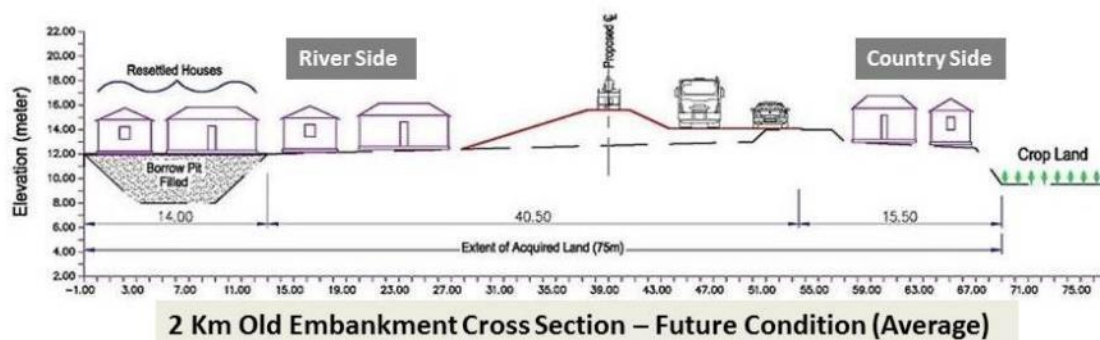


Table 11-1: Potential Resettlement Village Sites – For Illustration Only





**Figure 11-3: 2 Km Old Embankment Future Design Configuration**

### 11.3.1 Self-Managed Resettlement by Affected Households

245. The self-managed resettlement could be on their own land in same village or in nearby villages; through purchase of new land for housing and resettlement elsewhere. A total of 80% of affected households preferred to self-relocate themselves in the same or nearby villages after receiving all eligible benefits as per the policy framework and entitlement matrix. In most cases, they would need to develop the new land by filling it about 3-4 meters as the nearby areas, in most cases, are predominantly low-lying. Provision to assist the families for undertaking these tasks (land-filling) has already been included in Resettlement assistance. It is anticipated that the self-managed relocation strategy would limit social disruption by allowing the displaced families to stay around their own social kin groups as per their own choice. Apart from compensation and assistance planned per the project resettlement policy, the project will also assist them in the relocation process in terms of information, consultation with host communities and local government agencies, facilitation of documentation, licensing, registration as necessary with local governments.

### 11.3.2 Small Group Resettlement

246. The displaced households in groups of 25-30 families, typically related to kin or other social groups will be encouraged to resettle in “cluster” in nearby (host) villages. This is another form of self-relocation enabling the affected families to remain together for mutual self-help. The preference for this kind of “small group” resettlement has been voiced by a total of 15% of the displaced households. In keeping with the same, the project will provide additional support to these families and host villages (in which the small group would be relocated) in the form of additional civic amenities (such as provision of arsenic free tube-well and sanitation, development of road, additional rooms and spaces in mosques, schools, clinics in the host area etc. and others) so as to enhance the carrying capacity of these host villages and improve settlers-hosts relationship in these host villages.

## 11.4 Gender Planning and Other Vulnerable Groups



247. Gender and vulnerability are particular issues in instances of development-induced displacements. Women are particularly impacted due to land acquisition in the project due to their low level of awareness, lack of access to information, and low levels of training and education. Displacement from housing and dislocation in livelihood resources may put additional burden on them. There is hence potential risk of women being deprived of their due share of compensation to parental land being acquired under the project. There is also possibility of reduced access by women to replaced assets and regenerated livelihood resources.

248. In consideration of the above context, the policy framework adopted in this RP specifies that vulnerable groups will enjoy special attention in planning and implementation of the RP. Vulnerable groups are those likely to be particularly disadvantaged as a consequence of acquisition and resettlement, more prominently poor female-headed households, disabled headed households and

those households under the absolute poverty line. The RP has special provisions for the project affected women and vulnerable groups to meet their needs and support their means of subsistence: for example, (i) provision for additional shifting allowance for female headed households; (ii) income and livelihood restoration allowance for loss of income or employment; and (iii) roadside tree plantation as an alternative income generating program. Women interest will be further safeguarded in allocation of resettlement site plots (residential and commercial), identification of affected persons in jointly owned plots and payment of resettlement cash entitlements. A Gender Action Plan (GAP) has also been prepared for safeguarding the interest of the women in the resettlement process. Gender mainstreaming has been integrated with the relevant activities such as this RP, and the EMP.

## 11.5 Physical Cultural Resources

249. Only two physical cultural resources(PCR) will require compensation, the Mosque at Ghudi Bariand Verakhola shown below. Other PCRs are discussed above in Table 2-1: Issues of Focus Group Discussions (FGDs) for minimizing physical cultural resource (PCR) Displacement.

Mosque at Ghudi Bari	The proposed alignment would affect a mosque in Ghudi Bari.	villagers want to rebuild the mosque they own the land besides the existing mosque	Imam and villagers accept to shift the new mosque to the place besides the alignment	
Mosque at Verakhola	The proposed alignment would affect the mosque at Verakhola	The alignment cannot be changed as it has to follow the old embankment	The mosque will be shifted after consultation with the villagers to a nearby place	

## 12 Land Acquisition and Resettlement Costs

### 12.1 Introduction

250. This section provides the total land acquisition budget for Tranche -1. The costs for land acquisition and resettlement in the RP have been estimated at current market price of land as per land rates of 2013, physical assets and businesses by enhancing 2012 PPTA rates, and additional assistance for loss of income and vulnerabilities as per the resettlement policy framework. This budget is indicative of outlays for different expenditure categories assessed by CEGIS census (March-April 2013) for physical assets and ADB PPTA data (2013) for affected households due to acquisition of agricultural land. These costs will be updated and adjusted once the land acquisition boundaries will be finalized and the government adopts a price of land and other assets based on recommendations of PVAT for replacement value. Replacement value of land and property will be updated annually if the PVAT at the district level justifies the same at the time of dispossession for any considerable price escalation.

251. All land acquisition and resettlement funds will be provided by BWDB based on the financing plan agreed by the Government of Bangladesh and the ADB. Relocation of affected persons, squatters, encroachers and lessees, their R&R will be considered as an integral component of the project costs. The rehabilitation and training to the potential affected persons will be provided under the income and livelihood restoration program (ILRP) based on vulnerability and needs assessed through a special census and consultation exercise.

252. BWDB will ensure that the land acquisition and resettlement budgets are delivered on time to the DCs and resettlement account of the field office of the BWDB-RU respectively. BWDB will also ensure that the RP is submitted to the ADB for concurrence, and that funds for entitlements under the RP is fully provided to APs prior to the award of the civil work contract. Compensation and resettlement funds will be provided to the APs in two separate ways:

- Compensation under law for acquisition of land will be disbursed through the Deputy Commissioners;
- Additional assistance for resettlement of project-affected persons will be disbursed directly by BWDB with assistance from INGO.

### 12.2 Budget

253. The RP budgets for replacement value of land, structures and other assets, and special assistance will be calculated using the market rates reflecting replacement cost or updating the replacement value of assets at the time of dispossession. The costs for relocation and special assistance will be consistent with the resettlement policy framework and entitlement matrix. Other costs involving project disclosure, public consultations and focus group discussions, surveys, training and income and livelihood restoration, and monitoring and evaluation have been included in the RP budget. There is also a budget allocation for RP implementation (management and administration) and a +- 10% contingency. The cost estimate in this RP is based on inventory of losses updated as of May 2013 and current compensation rate evaluation. This estimate will be revised based on changes on any additional impacts to be considered. Therefore, the budget will remain as a dynamic process for cost estimate even during implementation. However, GOB is firmly committed to mobilize additional funds, if necessary.

254. The total budget for the Tranche-1 JRB-1 sub-reach resettlement is Tk 743,254,067 or about US\$ 9.3 million, including +- 10 percent contingency. The total budget for Tranche 1, including three RBP construction sites on the left bank of Jamuna and Padma, is Tk 1,088,990,258 or about US\$ 13.6 million.

255. *Land Acquisition* In JRB 1, 94 Ha for EMB and RBP and structures will be acquired, which accounts for roughly 70 percent of the total budget. In whole Tranche 1, additional 42 Ha for three RBP

construction sites on the left bank of the Jamuna and Padma river have to be acquired. These too are about 67 percent of the total budget.

256. *Replacement Cost* is about 12 percentage of the total Resettlement Plan budget and includes structures as well as trees, crops and perennials. *Relocation Cost* is 1.1 percentage of the total budget and includes transfer grants for affected structures, reconstruction assistance, and a homestead development grant. Also it provides a grant for the reconstruction of affected public cultural resources. *Rehabilitation Assistance* for the affected HHs 1.10 percent of the total budget and includes special assistance for vulnerable HHs, relocation assistance for owner-operated businesses and compensation of wage income losses. *Implementation, Service and Training* (10.22 percentage of the total budget) includes hiring an RP-INGO, hiring an LD-NGO, implementing an income and livelihood restoration program (ILRP), the costs for an external monitoring agency (EMA), costs for a grievance redressal committee (GRC) and public consultation.

**Table 12-1: Summary Budget for FERMIP Resettlement Plan for Tranche-1**

No.	Expenditure Item	Total BDT	Total US\$	%
A.	Land Acquisition	756,363,188	9,454,540	69.46
B.	Replacement Cost	115,924,581	1,449,057	10.65
C.	Relocation Cost	12,500,000	156,250	1.15
D.	Rehabilitation Assistance for AHs	12,013,000	150,163	1.10
E.	Implementation, Service and Training	93,190,400	1,164,880	8.56
F.	Subtotal (A+B+C+D+E)	989,991,169	12,374,890	
G.	Contingency (10%)	98,999,117	1,237,489	9.09
H.	TOTAL	<b>1,088,990,285</b>	<b>13,612,379</b>	

Table 12.2 is the detailed budget. See ANNEXURE VI for a more comprehensive budget.

**Table 12-2: Detailed Budget for FERMIP Resettlement Plan<sup>40</sup>**

## Total Tranche 1

Expenditure Item					Total BDT	Total US\$	%
<b>A Land Acquisition</b>					<b>756,363,188</b>	<b>9,454,540</b>	<b>69.46</b>
	Area (ha)	Unit Cost (decimal)	Unit Cost (ha)		BDT		
23 km JRB 1 EMB Land Acquisition	88	22,500	5,560,268		489,303,540		
1 km JRB 1 RBP Land Acquisition	1.82	22,500	5,560,268		10,119,687		
5 km JLB 2 RBP Land Acquisition	15	22,500	5,560,268		83,404,013		
2 km JLB 2 RBP Land Acquisition	6	22,500	5,560,268		33,361,605		
7 km PLB 1 RBP Land Acquisition	21	22,500	5,560,268		116,765,618		
Structures	4.21	22,500	5,560,268		23,408,726		
<b>B Replacement Cost</b>					<b>115,924,581</b>	<b>1,449,057</b>	<b>10.65</b>
1 Structure					67,191,087	839,889	
Structures	Units	Type	Unit Cost/sft	Average Area(ft <sup>2</sup> )	BDT		
	4	Pukka	1,466.67	187.5	1,100,003		
	2	Semi-Pukka	775	200	310,000		
	1812	Kutchha	332.5	190.9	115,015,341		
	831	Thatched	142.5	151.64	17,956,830		
Re-usable Materials	Tin wall/roof				67,191,087		
2 Trees/Crops/Perennials					48,733,494	609,169	
	Units	Type	Unit Cost		BDT		
	Fruitbearing	non-fruitbearing	Seedling	Fruitbearing	non-fruitbearing	Seedling	
	4563	55	255	Fruit	4,321	339	27
	2557	0	545	Timber	11,240	610	25
	205	0	0	Groves	170	100	50
	55	0	2	Banana	600	50	15
	54	0	17	Medicin	3,125	188	18
<b>C Relocation Cost</b>					<b>12,500,000</b>	<b>156,250</b>	<b>1.15</b>
1 Transfer Grant for Structures					3,402,000	42,525	
	Units		Unit Cost		BDT		
	1134AH		3,000		3,402,000		
2 Reconstruction and Homestead Development Grant					9,072,000	113,400	
	Units		Unit Cost		BDT		
	1134AH		8,000		9,072,000		
3 Reconstruction of Physical Cultural Resources					26,000	325	
	Units/Type		Unit Cost		BDT		
	2 Mosque		13,000		26,000		
<b>D Rehabilitation Assistance for AHs</b>					<b>12,013,000</b>	<b>150,163</b>	<b>1.10</b>
1 Vulnerable Households					6,585,000	82,313	

<sup>40</sup> Exchange Rate: 1 USD = 80 Taka

	UnitsType	Unit Cost	BDT		
	1317 vulnerable HH	5,000	6,585,000		
2	Moving Assistance for Owner operated Business		830,000	10,375	
	Units	Unit Cost	BDT		
	166 Business	5,000	830,000		
3	Assistance for Affected Wage Earners		4,598,000	57,475	
	Units Type	Unit Cost	BDT		
	1056 MHH	2,500	2,640,000		
	168FHH	3,500	588,000		
	548 Agricultural Land user	2,500	1,370,000		
<b>E</b>	<b>Implementation, Service and Training</b>		93,190,400	1,164,880	8.56
1	Implementation of RP		32,730,000	409,125	
		BDT	USD		
	Professional Staff	10,050,000	125,625		
	Office Support Staff	4,680,000	58,500		
	Field Support Staff	18,000,000	225,000		
2	Implementation of ILRP		59,160,400	739,505	
		BDT	USD		
	Livelihood Skills Development Training	4,337,520	54,219		
	Tailoring Training	7,492,240	93,653		
	Livelihood Development NGO	11,750,640	146,883		
	Inputs support for income restoration	35,580,000	444,750		
3	External Monitoring Agency		1,000,000	12,500	
4	GRC, Consultation Associated Costs		300,000	3,750	
<b>F</b>	<b>Subtotal (A+B+C+D+E)</b>		989,991,169	12,374,890	
<b>G</b>	<b>Contingency (10%)</b>		98,999,117	1,237,489	
					<b>9.09</b>
<b>H</b>	<b>TOTAL</b>		<b>1,088,990,285</b>	<b>13,612,379</b>	<b>100.0</b>

## 12.3 Unit Costs of Land and Assets

### 12.3.1 Replacement Cost (RC) of Land

257. Price of land in Bangladesh varies substantially depending on productivity, commercial utility, and proximity to urban centers and access to roads. Land price, therefore, varies also within a given geographical boundary like the smallest land administrative unit called “Mouza”. The Deputy Commissioners, therefore, determine the compensation for land for each mouza or location of the land to be acquired. BWDB, to estimate the cost of land, also carried out land market survey 2012-2013 to collect market price of land for each Mouza. The replacement price of land was determined for each mouza by category of land by its uses: (i) residential/commercial land, (ii) agricultural land, (iii) fallow land, and (iv) sand casted land. The owners of acquired land purchasing replacement land will be waived from all taxes and charges for land titling through appropriate reimbursements.

258. Table 12-3 indicates the estimated current market price (CMP) of land based on the current market prices determined by the sub registry office in Upazila Shahjadpur, District Sirajganj. RC of land is defined as the combined CMP and the cost of land transfer for replacement land purchase with the equivalent amount of CMP. However, these rates will be updated based on land market survey in the embankment and RBP areas during the detailed measurement survey (DMS).

259. For the estimation of the land acquisition cost, the current market prices of the land in the area were analyzed. The data are based on the Land market prices 2013 collected from the Sub registry office in Upazila Shahjadpur, District Sirajganj. The maximum values for homestead and cultivable land were used, to cover a price rise in the future. The average of the cultivable and homestead land is about Tk.15,000. For the CCL, this will be raised by 50%<sup>41</sup> which gives a total price of Tk.22,500/decimal or Tk.5,560,268/ha. As the land under water is not valuable, the maximum price for fallow land was used.

<sup>41</sup> As per the 1982 Land Acquisition Act.



**Table 12-3: The prices (Tk) for the Different Land Types in Different Mouzas in JRB-1 Sub-Reach**

No.	Mauza Name	Cultivable Land	Homes tead Land	Bhita <sup>42</sup>	Sand casted Land	Fallow Land
1	Joypur	7,291	8,000		185	
2	Gopalpur	7,445	4,000	2,300	225	2,428
3	Kaijuri	8,360	5,754	1,900	250	1,900
4	Ghudibari	10,125	9,971	1,500	210	
5	Vatpara	13,727	4,000		200	
6	Jagtola	12,478	9,524	2,000	217	2,000
7	Kayanathia	3,070	2,800	1,600	225	1,600
8	Kashipur	5,706	3,571	1,600	225	1,500
9	Garjana	3,545		1,500	225	1,000
10	Gala	6,778	8,640	3,333	225	1,200
11	Benotia	9,441	5,600	1,000	175	
12	Taratia	4,368	16,428		200	
13	Dorta Mehi	6,898	7,142	2,000	200	1,600
14	Datta Darta	3,306	2,800	2,200	220	
16	Barnia	6,358	5,000		250	1,800
17	Shantosh	7,709	4,285		200	1,500
18	Lochha	5,504	2,800		200	
19	Chayra	8,590	9,000	3,500	250	2,500
20	Ramkharua	6,293	15,000	2,200	200	1,800
21	Selachapri	4,680	3,500	2,500	315	2,000
22	Dombaria	13,348	3,000	1,800	200	1,800
29	Jamirta	750	2,100	1,000	200	
	Av by Type	5,563	4,923	1,521	171	1,449
		5,243				
	Max by type	13,727	16,428	3,500	315	2,500
		15,078				
	Min by type	750	2,100	1,000	175	1,000

Source: sub registry office, Upazila Shahjadpur, District Sirajganj

### 12.3.2 Replacement Cost (RC) of Structures

260. Loss of building structures, either commercial or residential have been assessed through CEGIS census survey in April-May 2013 following the original land acquisition plan in the embankment and the RBP. Based on CEGIS market survey, PWD rates, ADB PPTA rates recommended in 2012, rates used in the RP and some other similar projects, replacement market value of structure will be assessed for review and recommendation by the PVAT.

261. The owners of structures will be compensated at replacement cost irrespective of their title to land. The Deputy Commissioner will determine the market price of structures involving the Public Works Department (PWD) at district level. However, current market prices will be assessed for BWDB to recommend RC of physical structures for housing, commercial structure and community buildings (including primary, secondary and associated structures) based on cost of materials, type of construction, labor, transport and other construction costs and comparing those with the similar prices as stated above. No deductions will be applied for depreciation and transaction costs.

262. Table 12-4 indicates the compensation rates for acquisition of residential/commercial/religious structures as well as assessed current market prices of structures. The land cost given in Table 12-3 does not include land of squatter and vulnerable encroacher. It includes the structures of the squatters and the vulnerable encroachers also. Table 12-4 provides current market prices (CMP) to be recommended as RC of structures for units and types recognized in the joint verification, DCs' award information and the census survey by CEGIS in early 2013 in the project affected areas. The rates will be replaced once the PVAT recommends RC of structures for payment to the affected structure owners before dismantling.

<sup>42</sup>Bhita: Land near homestead land, not usable for cropping, commonly used as kitchen garden etc.

The compensation prices for different structures were determined, using the average cost of 4 former projects. The details are shown in the table below.

**Table 12-4: Current Market Price of Affected Structures for 2013**

			Dhaka-Chittagong National Highway (N-1) Bridge	Coastal Embankment Improvement Project (CEIP)	Bangladesh Bridge Authorities Multilane Tunnel Under the River Karnaphuli	Dhaka Water Supply and Sanitation Project (DWSSP)	Average cost of structure	Average cost For katcha and tin structure	Numb. of structur es by type
			Rate in BDT	Rate in BDT	Rate in BDT	Rate in BDT	Rate in BDT		
A1 Compensation for primary structure									
1	Pucca	per sft	1,200	1,200	2,000		1,466.67		4
2	Semi Pucca	per sft	700	600	1,200	600	775.00		2
3	Tin made	per sft	380	380	400	400	390.00	332.5	1812
4	Katcha	per sft	275	275	250	300	275.00		
5	Thatched	per sft	150	150	120	150	142.50		831
A.2Compensation Secondary Structure									
1	Pucca Latrine	per no.	20,000	12,000	25,000	20,000	19,250		
2	Slab Latrine	per no.	3,000	3,000	5,000	5,000	4,000		
3	Katcha Latine	per no.		2,000		2,500	2,250		
4	Tube well	per no.	16,000	16,000	10,000	10,000	13,000		
5	Boundary wall (Brick 5")	per rft	600	300	400	400	425		
6	Water Pump	per no.	5,000				5,000		
7	Bill Bord	per sft	200,000				200,000		

Source: DDC, Draft Report on Valuation of Structure, Tree and Crop, 30 March 2013

### 12.3.3 Market Value of Trees

263. Number of trees of different sizes and species including Bamboo and Banana plants has been assessed through CEGIS census survey in April-May 2013.. The market value of these trees, bamboo and banana groves have been taken from the CEGIS survey. However, current market prices of trees will be assessed for affected trees following the units used by the Divisional Forest Offices (DFOs) of in the concerned divisions. These rates will be reviewed by PVAT for recommending the RC of trees for 2014. The owners of trees will be compensated at current market cost irrespective of their title to land.

264. The Deputy Commissioners will determine the market price of trees involving the Department of Forest (DOF) at district level (with the help of respective DFOs). However, CMPs of trees will be determined through an external market evaluation obtaining data from saw mill owners, timber traders, sellers and buyers and comparing those with the DFO rates with 50% enhancements as per law. In absence of data on quantity of trees as per DFO units, ADB PPTA rates enhanced with 50% will be used to prepare budget for trees (Table 12-5).The table below shows the market value of different trees by size.

**Table 12-5: Number and Market Value of Trees by size**

	Prices of trees			Number of trees		
	Fruitbearing	non-fruitbearing /small tree	Seedling	Fruit bearing	non-fruit bearing /small tree	Seedling
Fruit	4,321	339	27	4563	55	255
Timber	11,240	610	25	2557	0	545
Groves	170	100	50	205	0	0
Banana	600	50	15	55	0	2
Medicin	3,125	188	18	54	0	17

### 12.3.4 Market Value of Crops

265. Standing crops on acquired land will be identified through joint verification by DC in 2014. The amount of yield will be taken from the district agriculture extension offices and the market rates of crops at the time of dispossession will be taken from the Department of Agricultural Marketing office (Dhaka). Crop yield and market prices will also be taken through a field survey, assessing the current market price of standing crops. Table 12-6 indicates the quantum of agricultural land and the rates for compensation of crops for each unit of land (dec).

**Table 12-6: Current Market Price of Standing Crops**

Crops	Value BDT./ha.			Value BDT./decimal		
	Gross value	Cultivated value	Total value	Gross value	Cultivated value	Total value
Mixed B.Aus & Aman	33500	31132	64632	136	126	262
T. Aman	46063	43595	89658	186	176	363

**12.3.5 Provisions of Resettlement and Rehabilitation Assistance<sup>43</sup>****12.3.5.1 Additional Assistance**

266. Provision for additional assistance (difference between Replacement Costs and Compensation under Law) will be assessed on the actual compensation paid by the Deputy Commissioner. The amount obtained from DC offices will be deducted from the Replacement Cost of land, structure and trees to obtain any balance for ensuring RC of land and property. The balance will be paid to the owners of land and property directly by BWDB with assistance from the RP-INGO.

**12.3.5.2 Dislocation Allowance**

267. A dislocation allowance for loss of land will be provided to all affected persons losing land. The allowance will be BDT 100 (one hundred) for one decimal of acquired agricultural land, water body and fallow land, and it will be BDT 200 (two hundred) in case of homestead and commercial land. The maximum amount of dislocation allowance determined at these rates will be BDT 20,000/- (twenty thousand) for any types of land. Lessees of land will be provided dislocation allowance at the rate of BDT 100 (one hundred) per decimal of land and the maximum amount determined at this rate will be BDT 5,000/- (five thousand) for each owner of land.

**12.3.5.3 Transfer Grant**

268. All the displaced households, businesses and physical cultural resources will require shifting their belongings and salvaged materials for which a Transfer Grant will be provided of Tk.3,000.

**12.3.5.4 Reconstruction Grant**

269. All the displaced households, businesses and physical cultural resources (community premises) will require reconstructing their housing, business and community premises at permanent alternative sites. A Reconstruction Grant will be provided to the affected persons at the rate of BDT 10 (ten) persqft for residential structure, and BDT 15 (fifteen) per sgft for commercial and physical cultural resource structures.

**12.3.5.5 One Time Special Assistance**

270. Affected female-headed households, disabled-headed households and owners of self-operated commercial premises will be provided with One Time Special Assistance at the rate of BDT 5,000 (five thousand) each. The entitlement will be paid directly to the head of households and actual owners of the commercial premises.

**12.3.6 Approval of the Resettlement Budget**

271. Resettlement and rehabilitation budget included in this RP will be revised as per findings in the detail design through inventory verification and determining replacement value of property at the time of dispossession. The MoWR will approve the revised budget.

272. The rates for cash entitlements for rehabilitation as well as allowances payable to AHs will be adjusted annually, based on the actual annual inflation rate. BWDB will determine the annual inflation rates to be applied to all cash entitlements during the updating of the RP based on final inventory verification upon detailed engineering design and confirmation of the acquisition boundary of the embankment and RBP.

<sup>43</sup>See Annex VI: Comprehensive Detail RP Land Acquisition and Resettlement Budget for Tranche-1 JRB-Sub-reach RP

273. The RP-INGO implementing the RP will assist BWDB preparing resettlement budgets covering all eligible loss and entitlements confirmed through joint verification and determination of replacement market price of land and property by PVAT. This budget will be approved by BWDB through appropriate authorities and made available for placement with the RU account of the BWDB as per requisition from the CRO heading the RU. The LD-INGO designing and implementing the livelihoods program will follow suit.

## **13 Resettlement Databank, Monitoring And Evaluation**

### **13.1 Introduction**

274. Resettlement of APs aims for improving on or at least restitution of their social and livelihood resources at the pre-project level. The process of implementation must ensure that the affected persons are able to regain their pre-project socioeconomic status. Therefore, monitoring of the process of planning, implementation and delivery of institutional and financial assistance to the project affected persons has been designed as an integral part of the overall functioning and management of the Project. BWDB will establish a monitoring and evaluation (M&E) system as a systematic and continuous process of collecting, collating and analyzing information about the progress and a tool for identifying strengths and weaknesses of the process. Also a periodic evaluation of the process and the outcomes will enable BWDB to identify lapses, procedural weaknesses, policy inadequacies and institutional drawbacks to devise and implement corrective measures to achieve the desired goals and objectives of the RP.

275. A comprehensive and relevant database and management information system (MIS) will be established and updated periodically for monitoring various activities of RP implementation. The RP database generated through land acquisition plan, census, baseline socio-economic survey, land market survey and consultation, CCL payment and resettlement benefit payment database will become essential input of the MIS. BWDB will develop a monitoring program that covers all essential stages of resettlement including apprehension of RP and planning, relocation and rehabilitation through progress monitoring and evaluation of intended outcomes of RP implementation. The monitoring should also cover performance of the individual staff in resettlement operation. Data generated through Focus Group discussion will be an integral part of the monitoring process.

### **13.2 Objectives of M&E**

276. The M&E system will serve as a tool for monitoring and evaluation of resettlement program ensuring timely and fair delivery of entitlements. The M&E will enable BWDB to get feedback from target population and the field operatives to devise corrective measures to ensure achievement of targets within schedule. The objectives of M&E will enhance the delivery capacity of the BWDB and maximize benefits of RP packages to the affected persons and the host communities.

277. The M&E will be carried out through collecting, analyzing, reporting and using information about resettlement progress as per scope of the RP and the process adopted for achieving the progress. It will ensure that inputs are provided, procedures are followed, and outputs are monitored and verified as per approved plan and schedule of actions. Identifying lapses and failures at implementation process, BWDB will undertake timely management actions. A benchmark database will be developed for the purpose of ongoing monitoring and periodic and ex-post evaluations of the RP targets.

278. BWDB field offices will conduct field level monitoring and assess the daily operation of land acquisition, payment of compensation, identification of entitled persons physically, and processing their entitlements, relocation and resettlement.

### **13.3 Stages of M&E**

279. Monitoring will be done both internally and externally to provide feedback to BWDB and to assess the effectiveness of the RP policy and implementation. Internal monitoring will be carried out by BWDB at three consecutive stages of the process of RP implementation: RP apprehension or preparatory stage, relocation stage and rehabilitation stage. Scope of M&E at these stages will be as follows:

### **13.3.1 Preparatory Stage**

280. During the pre-relocation phase of resettlement operation, monitoring is concerned with administrative issues such as, establishment of resettlement unit, budget management, requirement for further land acquisition, consultation with APs in the preparation of resettlement plan and their participation in the implementation process, information dissemination on payments of entitlement due, grievance redress, and so on. The key issue for monitoring will be to:

- Conduct baseline survey;
- Consultations;
- Identify APs and their numbers;
- Identification of different categories of APs and entitlements of individuals;
- Collection of gender disaggregated data and preferences of women;
- Establish Inventory of losses;
- Ascertain Entitlements;
- Valuation of different assets not covered by PVAT;
- Budget delivery;
- Information dissemination;
- Institutional capacity assessment;
- Implementation schedule and items of expenditure;
- Grievance redress.

### **13.3.2 Relocation Stage**

281. Monitoring during the relocation phase covers such issues as site selection in consultation with APs, development of relocation sites, assistance to APs (especially to vulnerable groups) in physically moving to the new site. Likewise aspects such as adjustment of APs in the new surroundings, attitude of the host population towards the new comers and development of community life are the issues considered at this stage. The key issue for monitoring will be:

- Payment of compensation;
- Delivery of entitlement;
- Grievance redressing;
- Support in CCL collection process ;
- Preparation of resettlement site, including civic amenities (water, sanitation, drainage, paved streets, electricity supply);
- Consultations;
- Relocation;
- APs who do not relocate;
- Payment of resettlement benefit;
- Income and livelihood restoration assistance.

### **13.3.3 Rehabilitation Stage**

282. Once APs have settled down at the new sites, the focus of monitoring shifts to issues of economic recovery programs including income generating schemes (IGSs), acceptance of these schemes by APs, impact of IGSs on living standards, and the sustainability of the new livelihood patterns. The key issue for monitoring will be:

- Initiation of income generation activities;
- Provision of basic civic amenities and essential facilities in the relocated area;
- Consultations;
- Assistance to enhance livelihood and quality of life.

### 13.3.4 M&E Indicators

283. Compliance of the RP policy and targets in the implementation process will be monitored through setting up indicators developed by BWDB with assistance from the construction supervision consultant (CSC). The most crucial components/indicators to be monitored are specific contents of the activities and entitlement matrix. The RP contains indicators and benchmarks for achievement of the objectives under the resettlement program. These indicators and benchmarks are judged for implementation process, outcomes and impacts (see boxes 1, 2 and 3).

#### Box1: Process Indicators

Project input, public participation and monitoring	Setting up RU and placement of staff Deployment of implementing agencies Training of RU staff Census, IOL, baseline socioeconomic survey Placement of funds for land acquisition and resettlement Expenditure of implementing agencies Deployment of an external monitoring agency Procedure of identification of eligible affected persons Procedure of determining loss and entitlements Procedure of allocation of RV plots Development of livelihood and income restoration program Preparation of disclosure instruments Disclosure and consultation events Formation of GRC, RAC, PVATT, and IVC Grievance redress procedures in-place and functioning Level of public awareness on RP policy and provisions Cost of compensation collection by APs Monitoring reports submitted
--	---

#### Box 2: Output Indicators

Delivery of entitlements, relocation and rehabilitation	Number of households relocated (by RV and host areas) Number of households compensated and assisted Number of businesses relocated (by RV and host areas) Number of affected persons purchased replacement agricultural land Amount of compensation disbursed Amount of resettlement benefits disbursed Number of eligible persons identified for training Number of vulnerable households resettled Number of vulnerable households brought under ILRP
---	---

#### Box3: Impact Indicators

Longer term impacts	Changes in housing Changes in water and sanitation Changes in land holding Changes in occupation Changes in income and expenditure Pace of income against change in expenditure Changes in attending health problems Nutrition of women and children Gender balance and women empowerment Changes in vulnerable households and women headed households.
---------------------	--

### 13.4 Monitoring Levels and Hierarchy

284. Monitoring will be carried out at three levels. The Project Director (PD) will carry out regular internal monitoring with input from the field operation. An external monitoring will be commissioned by BWDB employing a qualified and experienced external agency. The Construction Supervision



Consultants will also carry out supervision and monitoring to assist BWDB.. The institutional hierarchy is understood at Table 13.1.

#### **13.4.1 Internal Monitoring**

285. The Project Director (PD) will carry out internal monitoring through the Deputy Director, M&E with the help of the implementing NGO and the construction supervision consultant (CSC). Internal monitoring will comprise of monitoring the process indicators and the output indicators. The INGO will gather information on RP implementation covering relevant activities as per schedule. CSC resettlement specialists (one international and two national) will assist the PD in monitoring the activities of the INGO and review field progress reports regularly. INGO will prepare monthly progress reports (MPRs) that will include the monitoring issues. PD will develop progress and performance monitoring software to get monitoring output on a regular basis. Internal monitoring reports on RP implementation will be included in the quarterly Project Progress Report (PPR) of the BWDB.

286. The report of internal monitoring will contain: (i) accomplishment to-date, (ii) objectives attained and not attained during the period, (iii) problems encountered, and (iv) suggested options for corrective measures. The internal monitoring reports submitted by the INGO will be synthesized by the CSC resettlement specialists. The international resettlement specialist (IRS) with the CSC will assist PD in preparing the overall resettlement status in the PPR in consultation with the national resettlement specialists (NRSs). However, the NRSs will particularly monitor the activities of INGO and report to PD, FERMIP on a monthly basis under the guidance of the IRS.

#### **13.4.2 External Monitoring**

287. External monitoring will be carried out periodically for review and assessment of resettlement implementation, verification of the results of internal monitoring in the field, and suggesting adjustment of delivery mechanisms and procedures as required. The main objectives of external monitoring will be to review the RP implementation and assess the achievements vis-à-vis resettlement objectives; changes in living standards and livelihoods of those affected; restoration of the economic and social base of the affected people; the effectiveness, impact and sustainability of entitlements, and the need for further mitigation measures. The overall aim of external monitoring will be to learn strategic lessons for future policy formulation and planning. External monitoring will be external of the BWDB RU involved in implementation of the RP.

288. External monitoring will be carried out on an annual basis. Mid-term and final evaluations will be done to assess the achievement of objectives of RP against the performance impact indicators. A database for monitoring and evaluation, building upon the project's own M&E system will be developed for external monitoring. It will optionally include maps, charts, photographs of affected property, copies of contracts and land titles, payments, and valuation documents relating to resettlement.<sup>44</sup>

### **13.5 Methodology and Approach**

289. The M&E approach will be to identify and select a set of appropriate indicators and gathering information on them to assess the changes and variations. Participation of stakeholders especially the affected persons, women and vulnerable groups will be ensured in the M&E process. The process will also undertake various formal and informal surveys for impact analysis. Assessment of resettlement efficiency, effectiveness, impact and sustainability will be carried through the M&E process for identification of lessons from the Padma Multipurpose Bridge Project for building upon future policies on involuntary resettlement in the country.

---

<sup>44</sup>From ADB's SPS, p. 50. "For projects with significant involuntary resettlement impacts, the borrower/client will retain qualified and experienced external experts or qualified NGOs to verify the borrower's/client's monitoring information. The external experts engaged by the borrower/client will advise on safeguard compliance issues, and if any significant involuntary resettlement issues are identified, a corrective action plan will be prepared to address such issues. Until such planning documents are formulated, disclosed and approved, the borrower/client will not proceed with implementing the specific project components for which involuntary resettlement impacts are identified." See Annex V: Draft Terms of Reference for External Monitoring Agency (EMA).

290. Monitoring tools would include both quantitative and qualitative methods as follows:
- Sample household survey: a baseline household survey of representative sample (20% of affected households), disaggregated by gender and vulnerability to obtain information on the key indicators of entitlement delivery, efficiency, effectiveness, impact and sustainability.
  - Focused Group Discussions (FGD): Consult with a range of stakeholder groups (local government, resettlement field staff, NGOs, community leaders and APs including women and vulnerable groups).
  - Key informant interviews: Consult individuals like local leaders, village workers or persons with special knowledge or experience about resettlement activities and implementation.
  - Community public meetings: Open public meetings at resettlement sites to elicit information about performance of various resettlement activities.
  - Structured direct observations: Field observations on status of resettlement implementation, plus individual or group interviews for crosschecking purposes.
  - Informal surveys/interviews: Informal surveys of APs, host village, workers, resettlement staff, and implementing agency personnel using non-sampled methods.
  - In the case of special issues, in-depth case studies of APs and host populations from various social classes will be undertaken to assess impact of resettlement.

### **13.6 Institutional Arrangements for M&E**

291. BWDB will carry out internal M&E of the RP implementation involving the RU field offices, implementing NGO and the construction supervision consultant (CSC). An external monitoring agency (EMA) will carry out M&E external of the BWDB. Project supervision consultant will oversee and monitor safeguard compliance of the project. In addition, the ADB will conduct their own mission within their own framework of social and environmental compliance monitoring. The project affected persons, their community and local level NGOs will also participate in the M&E process (Table 13.1).

#### **13.6.1 Office of the Project Director**

292. The Project Director (PD) will be responsible to oversee proper and timely implementation of all activities in RP. The RU within the Office of the PD will operate and manage implementation of RP with the assistance from an appointed implementing NGO. The monitoring will be carried out by Head of RU with support from the Field Offices and the resettlement implementation NGO. The RU will establish an M&E Section at the head office headed by a Deputy Director in charge of M&E (DDM&E). The M&E Section will have sufficient staff having appropriate skills and capacity, and necessary resources. The Implementing NGO will collect appropriate data from the field and provide feedback to BWDB on progress of RP implementation and the day to day problems arising out of the process.

#### **13.6.2 External Monitoring Agency**

293. An External Monitoring Agency (EMA), with prior experience in resettlement and rehabilitation of developed induced displacements will be engaged to carry out the external M&E and reporting of the implementation of the RP. The EMA will carry out annual, mid-term and final evaluation and recommend necessary changes to the Head of RU and the PD, FERMI for consideration. The scope of external monitoring will cover compliance monitoring and social impact evaluation of RP implementation. A sample TOR for hiring qualified and experienced External Monitoring Agency (EMA) is attached as Annexure-IV.

294. The EMA will cover the compliance issues such as (i) compensation and entitlement policies, (ii) adequacy of organizational mechanism for implementing the RP, (iii) restoration of APs incomes, (iv) settling complaints and grievances, and (v) provisions for adequate budgetary support by BWDB for implementing the RP. The EMA will assess if the APs: (i) have been provided with alternative sites for relocation; (ii) have re-established their structures; (iii) have re-established their business; and (iii) were extended assistance to restore their incomes from pre-project levels. It will also appraise the accounting documents used in recording the payments of compensation to APs by BWDB. In addition to this at least once a year an annual impact evaluation to assess the effectiveness of the work being undertaken

and level of results achieved. See Appendix *Organizational Charts* for more detail about monitoring and evaluation.

### 13.7 Reporting Requirements

295. Monitoring reporting to ADB is the responsibility of the borrower (EA, BWDB). The Head of RU responsible for supervision and implementation of the RP will prepare monthly progress reports on resettlement activities to PD, FERMIP. BWDB will submit semi-annual monitoring reports to the ADB. The EMA will submit bi-annual review directly to the ADB and determine whether resettlement goals have been achieved, more importantly whether livelihoods and living standards have been restored/enhanced and suggest suitable recommendations for improvement. Monitoring reports will be submitted at regular intervals as specified. Both monitoring and evaluation will form parts of regular activities and reporting on this will be extremely important in order to undertake midway corrective steps. Table 13.1 provides details on the content and timing for various report associated with M&E.

**Table 13-1: Reporting Cycle/Frequency**

Activity	Content	Timeline	Responsibility
Monthly Progress Report	Narrative as per Monitoring Plan format giving details on activity, results, issues affecting performance and variance if any and reason for same and corrections recommended	Submitted within 10 days of the next month	INGO
Quarterly Financial Reports	Expenditure vs. budgeted amount by budget heads and sub heads	Submitted within 30 days of end of financial quarter	BWDB
Quarterly Project Progress Report (R&R)	Narrative as per monitoring program on R&R issues in the QPR	Submitted within 20 days of the end of quarter	BWDB/CS C
Quarterly, Mid-term (half yearly) and Annual Reports	Narrative as per reporting format giving details on activity, results, issues affecting performance and variance if any and reason for same and corrections recommended	Submitted within 30 days after the mid and year end	EMA
Annual Financial Audit	Professional audit of accounts prepared by a qualified Chartered Accountant	Within 90 days of the end of fiscal year	BWDB
Final Report	Project achievements, failures and impacts	Submitted within 90 days of end of the project	EMA