



Bangladesh Water Development Board
Asian Development Bank

Flood and Riverbank Erosion Risk Management Investment Program – Project 1

ADB Loan No. 3138-BAN (SF)

Institutional Strengthening and
Project Management Consultant (ISPMC)

QUARTERLY PROGRESS REPORT NO. 15

FOR

JANUARY-MARCH 2019

Prepared by:

Reference:

ISPMC JV NHC-EMM

ISPMC – FRERMIP – 599

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26 February 2019

To

Mr. Md. Rafiqul Islam Choubey

Project Director,

Flood and Riverbank Erosion Risk Management Investment Program

152/3/B Bir Uttam, Kazi Nuruzzaman Road, Panthopath,

Firoz Tower, (12th Floor) Dhaka-1205, Bangladesh**Subject: Submission of Quarterly Progress Report No. 14
October-December 2018.****Reference: As per Institutional Strengthening and Project Management Consulting Services
Contract, Clause 9 (i), Page 35, ISPMC-FRERMIP-553**

Dear Sir,

Please find enclosed Revised Quarterly Progress Report No. 14 for the period October-December, 2018 for the “Flood and Riverbank Erosion Risk Management Investment Program (FRERMIP) – Project 1”. This report has been prepared in close discussion with your office, using information available in the Revised (September 2018) Development Project Proforma and considering the Facility Administration Manual.

The quarterly progress report documents the status of project and progress made during the reporting quarter. When required, it identifies changes to the key assumptions and possible risks to project implementation. This report was prepared by ISPMC with contributions, assistance and cooperation of the Bangladesh Water Development Board (BWDB).

We look forward to further comments from BWDB, ADB and others on this report.

Yours sincerely,

JV Northwest Hydraulic Consultants – Euroconsult Mott MacDonaldKnut Oberhagemann
(Team Leader)

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(Attn.: Mr. Pieter de Vries)

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ABBREVIATIONS AND ACRONYMS

AP	-	Affected Person
ADB	-	Asian Development Bank
ADP	-	Annual Development Program
BDPC	-	Bangladesh Disaster Preparedness Center
BDT	-	Bangladesh Taka
BDRCS	-	Bangladesh Red Crescent Society
BRM	-	Bangladesh Resident Mission
BWDB	-	Bangladesh Water Development Board
CbFRM	-	Community-based Flood Risk Management
CCL	-	Cumulative Cost for Land
CDMU	-	Community Development Medical Unit
CEGIS	-	Center for Environmental and Geographic Information Services
CRO	-	Chief Resettlement Officer
DG	-	Director General
DDM	-	Department of Disaster Management
DMC	-	Disaster Management Committee
DPP	-	Development Project Proforma
EKN	-	Embassy of the Kingdom of the Netherlands
EP	-	Entitled Person
FRERMIP	-	Flood and Riverbank Erosion Risk Management Investment Program
GAP	-	Gender Action Plan
GFM	-	Grout Filled Mattress
GOB	-	Government of Bangladesh
GON	-	Government of the Netherlands
ha	-	hectare
IMED	-	Implementation Monitoring and Evaluation Division
INGO	-	Implementation Non-Government Organization
ISPMC	-	Institutional Strengthening and Project Management Consultant
JLB-2	-	Jamuna Left Bank 2 Sub-Project
JRB-1	-	Jamuna Right Bank 1 Sub-Project
JVT	-	Joint Verification Team
km	-	Kilometer
LA	-	Land Acquisition
LAP	-	Land Acquisition Plan
MDIP	-	Meghna-Dhonagoda Irrigation Project
Mil	-	Million (1,000,000 unit)
MIS	-	Management Information Systems
MoDMR	-	Ministry of Disaster Management and Relief
MoWR	-	Ministry of Water Resources
O&M	-	Operation and Maintenance
PM	-	Project Manager (DDM)
PD	-	Project Director (BWDB)
PIRDP	-	Pabna Irrigation and Rural Development Project
PLB-1	-	Padma Left Bank 1 Sub-Project
PMO	-	Project Management Office (BWDB)
PMU	-	Project Management Unit (DDM)
PPTA	-	Project Preparatory Technical Assistance
PVAT	-	Property Valuation Advisory Team
QPR	-	Quarterly Progress Report

SCME	-	Senior Community Mobilization Expert
SMO	-	Sub-Project Management Office (BWDB)
ToR	-	Terms of Reference
ToT	-	Training of Trainers
UDMC	-	Upazilla Disaster Management Committee
USD	-	United States Dollars
VDP	-	Village Defense Party

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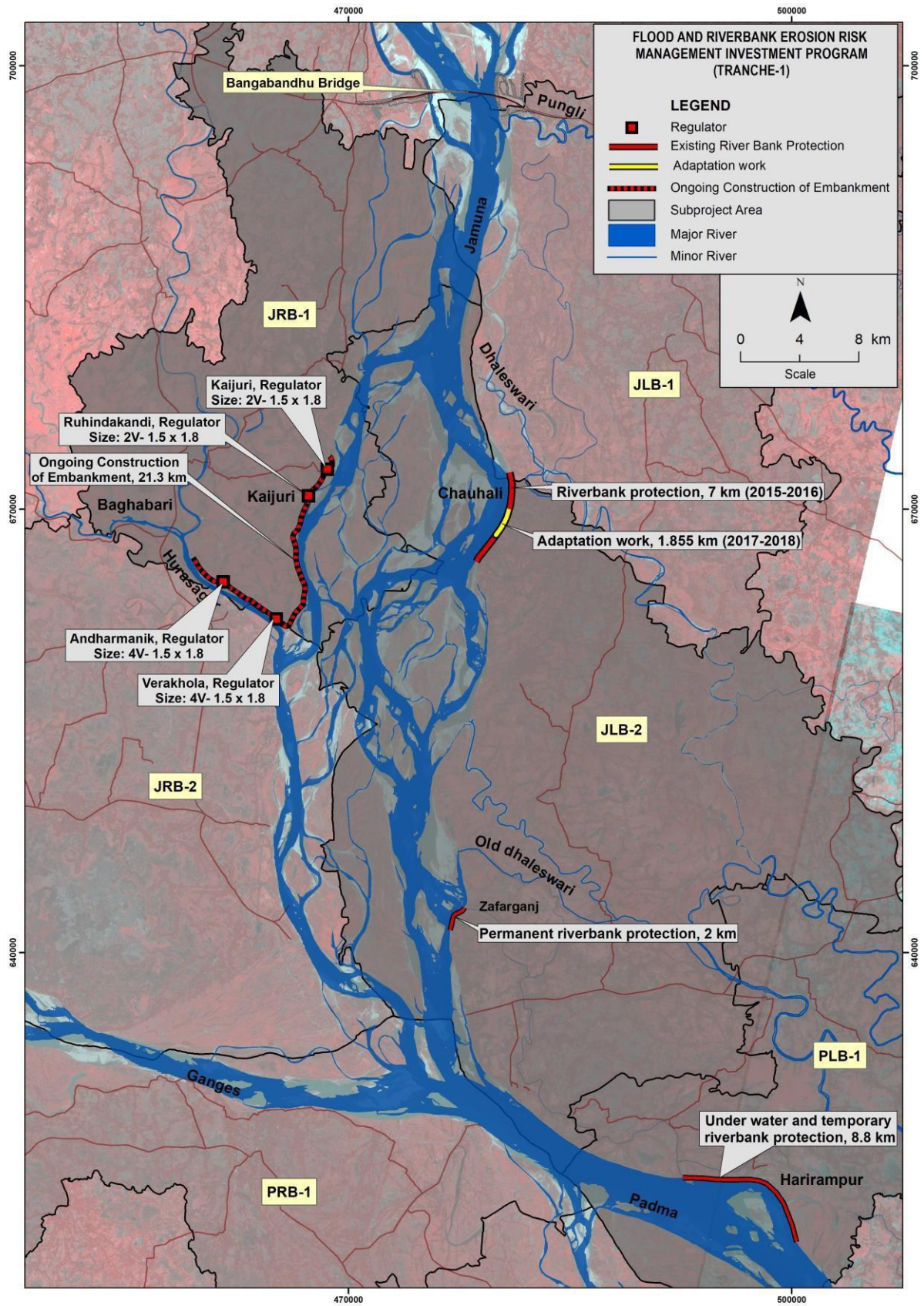


Figure 1-1 Index Map Tranche-1

Table 1 Project Progress at a Glance

1. Basic Data

ADB Loan Agreement Number	3138-BAN(SF)
ADB Grant Agreement Number	0396-BAN(EF)
Project Name	Flood and Riverbank Erosion Risk Management Investment Program - Tranche 1
Country	Bangladesh
Borrower	People's Republic of Bangladesh
Executing Agency	Bangladesh Water Development Board
Implementing Agency	Department of Disaster Management

2. Financing Plan

Modality and Sources	Tranches (\$ million)			Amount (\$ million)
	I	II	III	
Asian Development Bank (ADB)	65	100	90	255
Government of The Netherlands (GON)	15.3	0	0	15.3
Government of Bangladesh (GOB)	23.3	45.3	34.8	103.4
Total	103.6	145.3	124.8	373.7

3. Milestones

Milestone	Date of		
	Approval	Signing	Effectiveness
ADB Loan Agreement	2014 June 27	2014 August 14	September 17 2014

Milestone	Project		
	I	II	III
Estimated Completion Date	2020 June 30	2023 December 31	2024 December 31

Milestone	Date
Last ADB Review Mission	15-26 February, 2018

4. Assets and Physical Progress

Proposed Project Assets	Goods	Services	Works	Extra	Total	Available
Project Program Best Estimate (Tk Mil)	1360	1116	3609	2589	8674	8674

Primary Component	Secondary Component	Assigned Weight (%)	Progress	
			Actual (%)	Weighted (%)
1. Establishment & Recruitment	1.1 PMO Establishment and Staffing	2	100	2
	1.2 ISPMCC Consultants Recruitment	2	100	2
	1.3 NGO Recruitment	2	100	2
2. Implementation; Tranche-1	2.1 Detailed Design	2	100	2
	2.2 Tender Documents Preparation	6	98	6
	2.3 Tendering and Contract Award	6	98	6
	2.4 Land Acquisition and Resettlement	8	95	8
	2.5 Project Management	6	90	5
	2.6 Physical Completion of Works	32	80	26
	2.7 Financial Disbursements	4	85	3
3. Knowledge Base & Capacity	3.1 Knowledge Base & Tech. Studies	4	80	3
	3.2 CBFRM Activities	6	25	2
	3.3 MIS Project Mgmt Module	4	0	0
4. River Study, Piloting & Master Plan	4.1 Long-term stabilization study	4	75	3
	4.2 Land recovery piloting	2	40	1
5. Preparation; Project-2	5.1 Feasibility Study; Project-2	6	75	5
	5.2 Detailed Design; Project-2	4	70	3
Totals		100		78

5. Financial Progress

Financial Indicator	BDT Million	US\$ Million	% of Total
Estimated Project Cost (Source: DPP Page 1)	8,674	108.43	100
Physical Progress	7,066	88.33	81
PMO Expenditures	5,941	74.26	69
ADB Disbursement	4,610	57.63	53
Total Reimbursement	3,811	47.55	44

* 1 USD= 80.00 BDT (Reference -Revised Development Project Proforma/ Proposal- Page-2)

1. INTRODUCTION

1.1 Background

The people in Bangladesh are often detrimentally affected by flooding and riverbank erosion along its four main rivers: Jamuna, Ganges, Padma and Meghna. Even though the erosion rates of floodplain land have reduced from nearly 5000 hectares per year to less than 2,000 (Figure 1-1), ten thousands of people are affected annually.

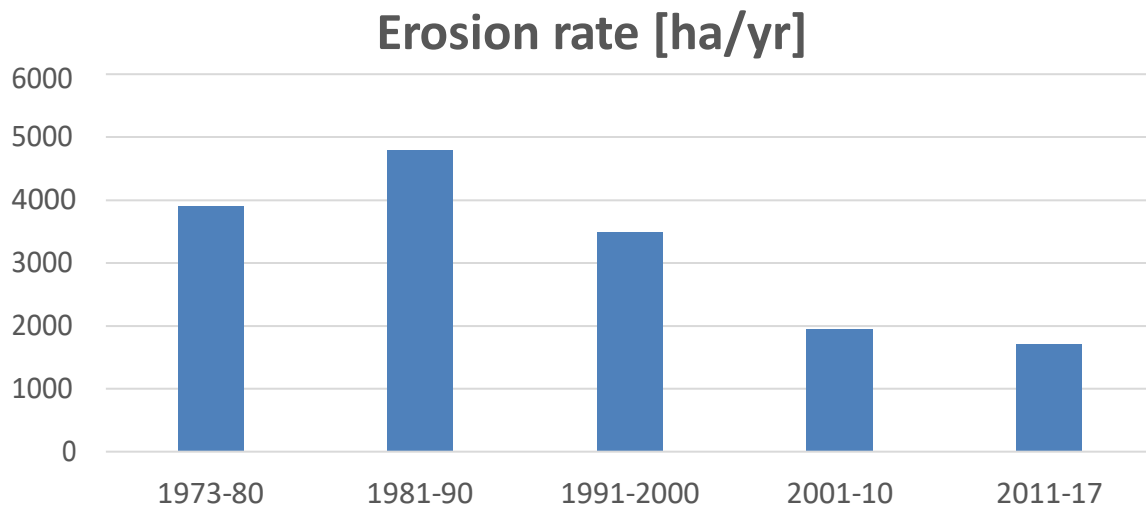


Figure 1-1 Decadal erosion rates*

*Source: Dr. Maminul Haque Sarker, Deputy Executive Director, Morphology Division, CEGIS

The risk associated with flooding and riverbank erosion increases with the growth of the population, and the high population density of Bangladesh restricts the scope for moving people away from disaster prone areas. Riverbank erosion increasingly threatens embankments required for flood protection, as the setback distances from the riverbank become increasingly smaller. The threat of flooding and riverbank erosion discourages investment and leads to lower economic growth in riverine areas. Effective riverbank erosion and flood protection management is essential for the economic growth and poverty reduction in affected areas.

Starting in 2004, geotextile bag revetments were used systematically to protect long reaches of the Pabna Irrigation and Rural Development Project (PIRDIP) and Meghna-Dhonagoda Irrigation Project (MDIP) against riverbank erosion. Between 2004 and 2011, this protection method was used along 17 km of the lower Jamuna River and some 11 km around the MDIP. Geobag revetments were incorporated into the 'Guideline for Riverbank Protection' approved by BWDB in 2010. Following a feasibility study completed in December 2013, the Government of Bangladesh (GOB) and Asian Development Bank (ADB) agreed to continue riverbank protection for more systematic river stabilization along the lower Jamuna and upper Padma rivers. This initiative includes recovering floodplain land lost during the widening process which has persisted since the 1960s¹.

¹ ADB 2014. Report and Recommendation of the President to the Board of Directors, Proposed Multitranchise Financing Facility, People's Republic of Bangladesh: Flood and Riverbank Erosion Risk Management Investment Program, June.

The Project Preparatory Technical Assistance (PPTA) implemented from 2012 to 2013 provides the key concept for FRERMIP and is documented in the Final Report, Feasibility Study, 2013 (**Ref. 3**). The ADB Facility Administration Memorandum, June 2014 (**Ref. 1**) is the key document prescribing the loan objectives and procedural details.

The loan for Project-1 of the Flood and Riverbank Erosion Risk Management Investment Program (FRERMIP) was signed on 14 August 2014, and the contract with the main consultant (ISPMC) was signed on 8 September 2015. The first 17.80 km of riverbank protection, concentrating on the critical underwater part, were completed during the dry season 2015/16. This first project lays the foundation for systematic river stabilization supported by FRERMIP over three successive projects to be implemented over a period of around ten years. The first project, scheduled to be completed in June 2020, will provide structural and non-structural flood and riverbank erosion risk management measures in three high priority sub-projects: Jamuna Left Bank 2 (JLB-2), Jamuna Right Bank 1 (JRB-1) and Padma Left Bank 1 (PLB-1); refer to **Table 1-1** and **Ref 3**. Subsequent projects will extend the protected reaches with the goal to substantially stabilize the lower Jamuna and parts of the Padma River, based on an adaptive approach with designs adjusted to changing river conditions.

FRERMIP will contribute to provide a defined boundary between river and floodplain, and thus contribute to a more secure and improved livelihood for people living along the main rivers of Bangladesh, which will trigger faster economic growth and accelerate poverty reduction. The outcome of the program will be reduced flood and riverbank erosion risks in the sub-project reaches.

1.2 The Project

The project has three funding partners including two international developing partners: Asian Development Bank (ADB), Government of Netherlands (GON) plus the local counterpart: Government of Bangladesh (GoB).

The project scope and implementation arrangements have not fundamentally changed from those outlined in the ADB Report and Recommendation of the President (**Ref. 2**), except for the postponement of some activities due to the reduction of available loan financing. The anticipated outputs of the project are still to provide:

1. flood and riverbank erosion risk mitigation functioning at priority river reaches
2. a strengthened institutional system for flood and riverbank erosion risk management

Under Project-1, nearly 17.80 km of riverbank protection² and 21.30 km of flood embankments (rehabilitation and new; refer to the Project Map-**Figure 1-1**) will be implemented. Adding to that, 3.2 km of grout filled jute mattress protection work is under implementation as river training pilot works. Project outputs will also include related social and environmental safeguards; institutional, knowledge-base, and capacity development; and community capacity development for flood risk management activities.

The project will result in an improved knowledge base and enhanced institutional capacity in sustainable asset management, and better strategic management of the main rivers. The project will actively promote a sound and sustainable program management system which will facilitate the implementation process. placed at the beginning of the report, provides a summary of project information including salient reference data, estimates of project assets, plus physical and financial progress indicators, in Bangladesh Taka (BDT), US dollars (USD) and percent completion. The project has been approved until June 2020 to complete the activities, namely, the embankment

² The length of protection work has increased from 16 to 17.8 km due to changes in the river morphology at Chauhali and Harirampur between the feasibility study and the construction start.

construction, pilot works including monitoring during the 2019 flood season, as well as non-structural flood risk management through the Department of Disaster Management (DDM). After the first revision of the Development Project Proforma (DPP), approved on 15 June 2017, the Project Management Office (PMO) has revised the DPP, which has been approved on 25 September 2018. The revised DPP increases the budget for land acquisition and resettlement to complete the embankment works, without increasing the overall amount. A first zero-cost Variation Order for the ISPMC was accepted on 27 July 2017, a second zero cost variation, extending the consulting services to May 2019, was signed on 10 June 2018. The 3rd zero cost variation is proposed during this quarter and is under approval, which has the consultancy services extended till December, 2019. In the 2nd Revised DPP, the two work packages W-12 and W-13 were excluded, along with service packages S-03, S-05 and S-07. The ADB has approved an extension of one-year loan and grant closing date up to 30-Jun-2020.

The PMO is expecting that the modified Project outputs (**Appendix-A, Table A-5**) can be fully achieved by 30 June 2020.

1.3 Overall Progress

Project-1 was very successful in its core activity, the construction of riverbank protection, during the dry season 2015/16. The progress during 2016/17 dry season concentrated on the continuation of the ongoing contract works. In total, 17.8 km riverbank protection (underwater with temporary or permanent wave protection above low water level) has been substantially completed. Some surficial damages at Chauhali, which occurred immediately after placing the surcharge of concrete blocks for the upper protection, have been investigated by a technical committee. This notwithstanding, the underwater protection has performed very well, despite deep scouring to, in places, 25 m below the original apron setting level as demonstrated by the Chauhali multi-beam echo-sounder survey performed in November 2017. During the 2018 dry season, the Chauhali underwater works was adapted over a length of some 3.8 km³. There were no surficial damages in the adapted area during the course of the 2018 flood season.

Over the year's geotextile bag revetments have been built for around USD 3 million or BDT 24 Crore per kilometer (in 2018 prices) with the cost stable (**Figure 1-2**). It is noteworthy that the works at Kaijuri built from 2009 to 2011 was some 40% below this average rate. Overall, geotextile bag revetments are the most cost-effective and sustainable solution built till date (**Table 1-1**). The ISPMC has documented and sent a number of analytical memos about the construction work and bank failures to the PMO as a part of knowledge sharing such riverbank protection works. The list of memos can be found in the **Appendix-J**.

³ Almost 14 crore taka has been spent for adaptation works at Chauhali under three different contracts (4.5 crore under W-06/W-07 and 9.5 crore under W-11)

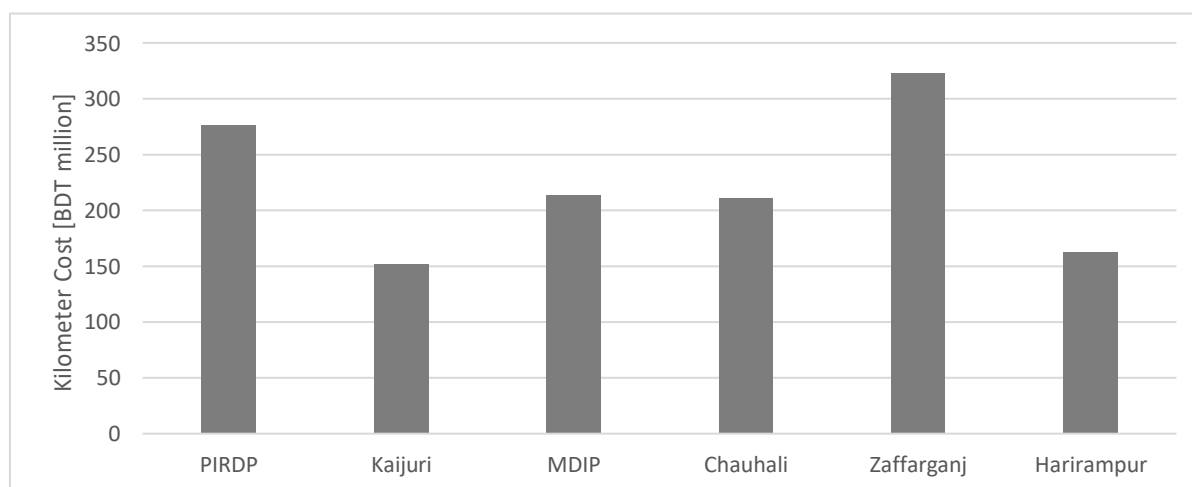


Figure 1-2 Kilometer cost of geotextile bag revetments implemented in Bangladesh (2018 prices-consideration of inflation rate)

Type of construction	Sirajganj	Betil & Enayetpur	PIRDP, Koitola
	CC Block revetment	RCC spurs	Geobag revetments
Construction completed	1998	2002	2008
Adaptation and reconstruction during first 10 years	6 times	7 times	0 times
Kilometer cost investment and [BDT million] 2018 prices	2,218 6,780	1,109 2,785	119 276
Adaptation and repair: In percent of construction cost	30%	120%	0%

Table 1-1 Comparison of major riverbank protection schemes

The construction of 21.3 km of embankment at Kajjuri to Verakhola U/S Reach has started since 15 February 2018 as per contract agreement with little progress before the flood season 2018. This is not at last due to the land acquisition and resettlement process, which requires additional funding to be sanctioned through the second revision of the DPP. After approving the revised DPP on 1 November 2018, construction activities are expected to be completed before contract closure in 31 May 2019.

The contractor for the package W-14 has mobilized on the site location. Slope will be prepared according to the approved design and Grout filled mattress will be laid in Harirampur, Manikganj for this package in the next quarter.

The overall weighted project progress is presented in **Table 1-1** and shows that the weighted progress achieved to the end of the reporting period is around 78% of the total time. Compared with the total estimated projected cost, the physical progress is 88%, PMO expenditure is 69%, ADB (plus GON) disbursement is 74%, and total reimbursement is 44%.

The following **Table 1-2** shows the relative comparison between the total project cost, ADB loan amount and the comparative percentage progress.

⁴ The revised project end date results in 73 months for implementation (April 2014 to June 2020) out of which 57 months (April 2014 until December 2018) have passed. The last six months are typically for accounts closure and administrative processes and not implementation of works.

Table 1-2 Comparative Project Cost and ADB Disbursement Progress

Total Project Cost (BDT Million)	ADB and GoN Aid (BDT Million)	ADB and GoN Disbursement Progress compared to the total cost (%)	ADB Disbursement Progress compared to the Aid amount (%)
8674.444	5907.485	74	86

1.4 This Report

Quarterly Progress Report No. 15 covers the period 01 January to 31 March 2019. The report describes activities carried out during the quarter, which primarily included: river training pilot works implementation, river monitoring, Chauhali slope failure analysis, river stabilization study, approval of Project-2 feasibility designs from BWDB design office, preparation and bidding for remaining goods, works and services contracts. Notable progress has been made in the construction of the Kojjuri embankment and the grout filled jute mattress protection works at Harirampur.

2. PROJECT ACTIVITIES

2.1 Introduction

The BWDB FRERMIP Project Management Office (PMO) started functioning in April 2014. That office was initially engaged in preconstruction and procurement activities, and since November 2015 with construction activities at three sites (through two Sub-Project Management Offices (SMOs) at Tangail and Manikganj). At the end of the second construction season (June 2017), a total of 17.80 km of riverbank protection has been constructed under the project: 7.00 km at Chauhali, 2.00 km at Zaffarganj and 8.80 km at Harirampur. The Kojjuri embankment construction has made upto 90% progress during this quarter.

The Institutional Strengthening and Project Management Consultants (ISPMC) have been working since 8th September 2015 and have completed the following activities: prepared the Project Inception, Mid-Term, and summary study team and draft feasibility reports, supported overall project management and capacity building activities, advised on design, construction and resettlement activities, and prepared the terms of reference for several supporting studies.

The status of implementation activities in the reporting quarter is discussed in the following sections, and summary and detailed tables are provided in Appendix-A and Appendix-B, respectively. The history of contractual awards and disbursements, as projected by ADB and as actually achieved, is shown in Figure 2-1, along with the actual total reimbursements.

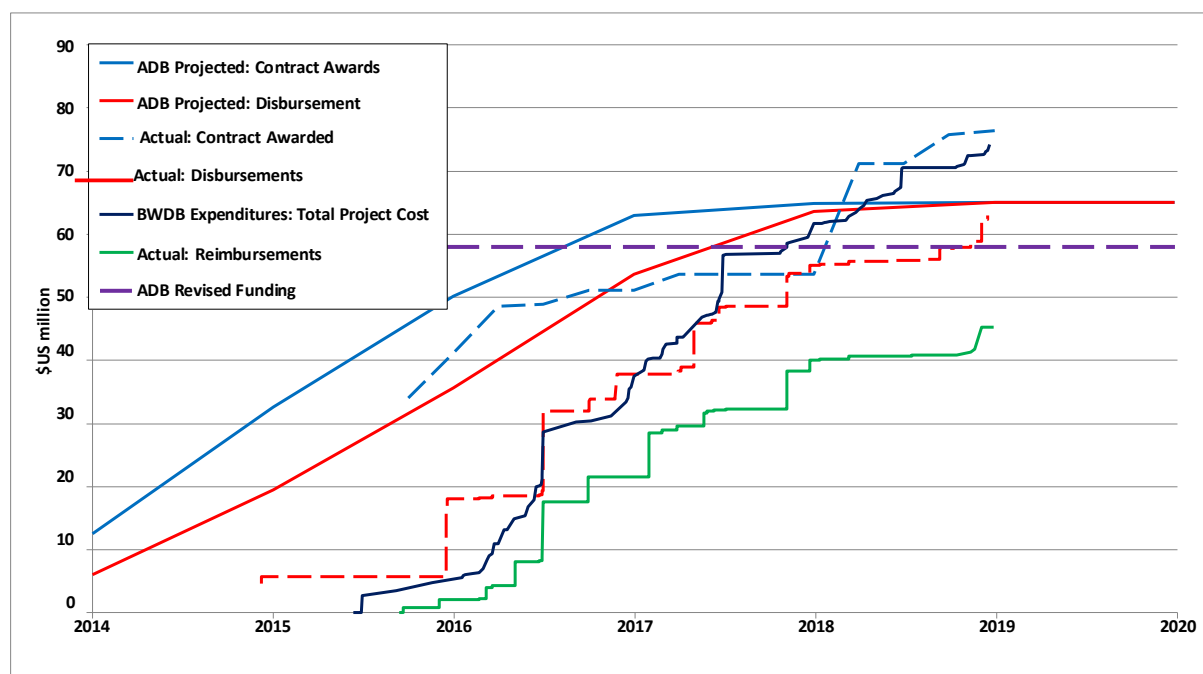


Figure 2-1 Contract, Disbursement and Reimbursement History of ADB Loan

Table 2-1 provides the status of annual ADP expenditures. It is expected that the completion of the embankment construction by May 2019 will substantially complete Tranche-1. The PMO expects to spend the remaining budget within June 2020.

Table 2-1 Annual ADP allocation and disbursement (in BDT million)

Fiscal Year	ADP/ADP Allocation	Actual expenditure	Percentage Actual/Revised
2014/15	2179.53	217.78	66.20/70.00
2015/16	2108.20	2074.34	90.33/98.39
2016/17	2290.80	2246.11	86.26/98.05
2017/18	1331.50	1106.21	40.65/80.08
2018/19	1726.30	1278.58	44.21/74.06

*Up to December 2018, Fiscal Year Ongoing; Source: IMED Report 03/2003

2.2 PROJECT ASSET IMPLEMENTATION

2.2.1 Introduction

Tables A-1 and **A-2** show the type, number and total cost of assets currently included in the program. The cost of the 21.30 km of embankment (plus associated structures) amounts to BDT 1,202.943 million, as per awarded contract (**Table A-5**). The 17.8 km of riverbank revetment is expected to cost BDT 1,863 million, plus BDT 1,054 million for geo-bags. Details on an individual contract basis are provided in **Table B-4**. According to the 2nd Revised DPP (September 2018) shows that the best estimate of final cost for all project assets currently identified is BDT 8,674.44 million (Goods BDT 1,360.26 million, Services BDT 1,116.08 million and Works BDT 3,609.24 million, plus BDT 2,588.86 million of additional assets included in the DPP; primarily land acquisition) The total cost may vary to the DPP allocated amount due to the exclusion of the service contracts.

Using cross-link tables that connect these category items (and Asset Types) with other financial indicators, it is relatively easy to produce tables which show project progress based on ADB Financial

Categories (**Table A-3**) or DPP Components (**Table A-4** and **A-5**). Note that **Table A-5** also contains the revised DPP values.

The second revised DPP was approved by the Planning Commission on 1 November 2018 and administrative approval letter issued on 19.11.2018. The revised budgetary allocations have been considered since the last quarterly progress report.

2.2.2 Bidding Activities

No major contract has been awarded during this quarter. The details of bidding activities can be found in the Table B-2 of **Appendix-B**.

2.2.3 Design Activities

All of the design work for Tranche-1 is essentially completed. The details of the Tranche-1 design works can be found in Table A-1 of **Appendix-B**.

2.2.4 Implementation Activities

The construction work of embankment has started from 15 february, 2018. For the package W-01, the contractor has completed the construction of regulator at Kojjuri by 75% by this quarter. The remaining works such as construction of chute blocks, baffle blocks, end sill, placing of already manufactured 10,469 CC blocks (Size - 30cm x 30cm x 30cm), backfilling, excavation of inlet and outlet channel excavation is in progress. The work of another two-vent regulator at Rohindakandi has started from the last week of December, 2018 and the work is in progress. Manufacturing of 10,469 CC blocks (Size - 30cm x 30cm x 30cm) has also been completed by November, 2018. Construction of both regulators are expected to be completed by May, 2019. The overall progress of embankment (From Ch 0.00 km to 5.00 km) up to December, 2018 is about 29%. The contractor is building the embankments with compacted sand dredged from the river with the target to complete the same by May, 2019. The progress filled dredged materials of package W-02 is 40% and the progress of earth work in package W-03 is 45% up to December, 2018. Total length of earth work in package is 7.50 km (From km 5.00 to km 12.50). In these two packages, there are structural works like regulator construction. The progress of filled dredged materials for construction of embankment (From km 12.50 to km 17.30 = 4.80 km) in package W-04 is 30% up to this quarter. One 4 (four) vent regulator under this package (W-04) is under construction. There are 357 RCC precast piles (each 10.00 meter long) and they all have been constructed. Out of 357 precast piles 57 piles have already been driven in position, Earth work for foundation trench has also been completed by almost 75%. Out of 15,933 CC blocks (Size - 30cm x 30cm x 30cm) all have already been manufactured. The construction of the regulator is in progress. The earthwork (by dredged fill materials) in package W-05 (From km 17.30 to km 21.30 = 4.00 km) is in progress. The progress up to December, 2018 is about 20%. There is one 4 (four) vent regulator under this package W-05. The work of regulator construction is in progress. The progress of earth work for foundation trench is about 59%. Requisite quantity of construction materials such as stone chips, coarse sand, cement and sheet piles have been brought to site. The contractor is progressing the work to get it completed by the end of the dry season.

2.3 OTHER PROJECT ACTIVITIES

Other project activities that are documented in the following sections include:

1. Supporting Service studies
2. Environmental Management
3. Resettlement Services
4. Gender and Development

5. Community-based Flood Risk Management
6. Capacity Building
7. Data Inventory Development
8. River Study
9. Feasibility Study for Tranche-2
10. ISPMC performance compliance with ToR

2.3.1 Supporting Service Studies

The project comprises four service contracts for supporting studies, two have been deferred to Tranche-2. The status of the four supporting studies is summarized in **Table 2-2**.

Table 2-2 Supporting Service Studies

Pkg.	Service Name	Present Status
S-01	Institutional Strengthening and Project Management Consultant (ISPMC)	The ISPMC signed a contract with BWDB on September 2015, and their work is estimated to be around 66 percent complete. The contract has been extended until May 2019 and it is discussed to extend the contract until December 2019.
S-02	Resettlement Plan Implementation	The Resettlement INGO signed a contract with BWDB on 16-Mar-2016, and their work is estimated to be 75 percent complete (Section 2.3.3).
S-04	NGO Service for Community based Flood Risk Management (DDM)	The contract was signed on 30 August 2018 and the contractor has started implementation since 01 September (Section 2.3.5). The contract ends in June 2019.
S-06	Erosion Prediction	CEGIS has completed the contract work in mid-2018.

2.3.2 Environmental Management

The National Environmental Specialist prepared Semi-annual Environmental Monitoring Report for the period July 2018- December 2018 and send to PMO for final submission to ADB. The National Environmental Specialist also submitted the monitoring report of EMP compliance of Embankment Construction packages at W-01/2016-2017 (Md. Moyenuddin (Bashi)-Golam Rabbani const. Ltd, JV) W-02/2016-2017 (Taher Brothers Ltd.- M.A Enterprise, JV), W-03/2016-2017 (Taher Brothers Ltd.- M.A Enterprise, JV), W-04/2016-2017 (HB-SSECL, JV) and W-05/2016-2017 (Md. Moyenuddin (Bashi)-Golam Rabbani const. Ltd, JV)

A Strategic Environmental and Social Assessment (SESA) of the MFF was carried out by the ISPMC (NHC/EMM, Strategic Environmental and Social Assessment (SESA) of River Stabilisation, September 2018) and reviewed by the Netherlands' Commission for Environmental Assessment in mid-2017 and a second time in January 2019 and further elaborated upon during a meeting held in NCEA's office in the Netherlands in which the IPMC Team Leader and the international Environmental Specialist participated. NCEA informed during this meeting that they will await with providing their final comments until they have received he PMU the first version of ISPMC's Long-term River Stabilization Plan (RSP), as they would like to see first to what extent SESA findings have been incorporated in the RSP. Consequently, NCEA's comments are currently expected in mid-2019.

The SESA differs from a usual EIA in that it focuses on regional development comprising several interventions over a long period of time rather than on a local site-specific intervention. The potentially long-term impacts of proposed works as detailed in the River Stabilisation Plan, (NHC/EMM, November 2017), pertain to the river as well as the floodplain and include changes in

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river morphology and aquatic habitat caused by riverbank revetments; effects on water bodies and associated habitats caused by disruption of hydrological and ecological connectivity between main and internal rivers, *beels* and *khals*, and so on.

Mitigation measures include fish passes and inland waterways (distributary) excavation. To evaluate environmental sustainability, identification of indicators to monitor the following is proposed:

(i) For the river and floodplain: (a) Conservation of biological diversity, (b) Maintenance of a productive river and floodplain fisheries, (c) Maintenance of ecosystem's health and vitality, (d) Conservation and maintenance of wildlife populations, and (e) Legal, institutional and economic framework for conservation and sustainable management.

(ii) For the floodplain: (a) Maintenance of wetlands, (b) Maintenance and enhancement of long-term economic benefits to meet the needs of local communities

The second version (of November 2018) of the Strategic Environmental and Social Assessment (SESA) of long-term river stabilization was reviewed by the Netherlands Commission for Environmental Assessment (NCEA) and their preliminary findings were presented by NCEA in Dhaka in January 2019,

Special Environmental field study conducted by the environmental Team under the direct supervision of the Fisheries Specialist from September 2017 ended in January 2019 and detailed report on the work is being finalized.

2.3.3 Resettlement Services

During this quarter, the INGO held a total of 54 public consultation meetings at the sub-project sites, altogether reaching a total of 442 public consultation meetings.

The INGO installed one Grievance Redress Committee (GRC) signboard in a well visible location in each site as per project requirement. Two GRC meeting were held in Zaffarganj (for the length of 1.4 km) and until now eight grievances have been addressed at this site. At Chauhali, a total of 36 grievance applications have been received and one meeting of the GRC was held. After that, all 36 applications were forwarded to Property Valuation Advisory Team (PVAT) for structure rate fixation. Accordingly, 36 APs received Cheque for structure Replacement Cost (RC).

A total of 2,956 affected people received Cumulative Cost for Land (CCL) as per Law from respective DC office. A total of 1,071 entitled persons received resettlement grant and replacement cost. The following Table 2.3 and Table 2.4 summarize the compensations received by the Affected Persons and the list of awareness meetings held.

Table 2-3 Summary of Compensations Received by the AP

Sub-Project	Cumulative status as of	Payment status	
		Resettlement Grant	Cumulative cost for land (CCL)
Zaffarganj RBP JLB-2 (1.4 Km)	Total APs - 90 APs All APs submitted application to DC office for CCL payment	90 APs received Resettlement Grant	20 EPs received CCL
Zaffarganj RBP JLB-2 (0.6 Km)	Total APs - 26 All APs submitted application to DC office for CCL payment.	26 APs received Resettlement Grant	07 EPs received CCL payment from DC office
Chauhali RBP JLB-2 (7.8 Km)	Total APs - 191 Structure Replacement Cost (RC) for 36 APs Cheque distributed on 25-Apr-2018	52 APs received Resettlement Grant & 36 APs received Replacement Cost (RC)	EPs received CCL payment DC office from Tangail; EPs received CCL payment DC office from Sirajganj;
Embankment JRB-1 (21.3 Km)	Resettlement grant budget for title & non-title holders submitted to PD office. A total of 3958 Notice Holders APs applied for CCL Payment to DC office	867 APs (662 Titled Holders & Uthuli and 205 squatters) received Resettlement Grant	Out of 3958 Notice Holders, 2870 EPs (1790 land owners and 1080 Structure Holders) received CCL payment from DC office at Sirajganj & Pabna.
Harirampur RBP PLB-1 (8 km)	Land Acquisition Plan has been approved by DC office	Not yet started	Not yet started

Table 2-4 List fo Awareness Meetings Held

Place	Nos. of Awareness Meetings held in this quarter	Total Nos. of Awareness Meetings held
Zaffarganj (1.4 km)	04 Public consultation meeting	44 Public consultation meeting
Zaffarganj (600 m)	N/A	28 Public consultation meeting
Chauhali	04 Public consultation meeting	60 Public consultation meeting
Embankment JRB-1	46 Public consultation meeting	292 Public consultation meeting
Harirampur	No Public consultation meeting	18 Public consultation meeting

The NGO distributed an Information Brochure detailing the documents needed for payment of Cumulative Cost for Land (CCL) payment to all APs during public consultation meeting. INGO has formed 60 groups each consisting of 20 members (total 1200 members) to facilitate income generating activities.

2.3.4 Gender and Development

In 20 March 2019, 1 (one) Gender specific course has been held for raising awareness and building capacity of female staffs, BWDB officials. The venue of training was BWDB Chief engineers conference room and the participants were Chief Engineer (Design), Superintending Engineer (Design Circle II), Executive engineers, Sub divisional engineers and Assistant engineers from different region of Bangladesh. Out of 40 participants 16 were female. The main discussions of the training included:

- Briefing on FRERMIP activities & implementation strategy; Concept of Gender Equality,
- Equity and Mainstreaming; National and International Policy commitment of GOB in Gender;
- Mainstreaming Importance of Gender Mainstreaming in FRERMIP activities; Importance of women-friendly design of physical structures; Gender Action Plan (GAP) of FRERMIP;
- Importance of Sex-disaggregated data collection and use; and Importance of implementation & reporting of Project's GAP. BWDB and Project's senior officials attended as resource persons in this workshop. The training was conducted in a participatory way and all participants provided their opinion and comments through VIPP card and presentation.

The training was very successful ensuring collaborative understanding and discussion on the above topics and establishing the main objective of the program

The GAP progress report is compiled as per approved revised GAP which is provided in Appendix F.

2.3.5 Community-based Flood Risk Management (CbFRM)

During the quarter (January-March, 2019) the implementing NGO (INGO) implemented a list of activities, which are as mentioned below:

During January, 5-day capacity enhancement training in 24 batches was conducted for a total of 605 community volunteers (CVs), grouped in 40 Community Disaster Management Units (CDMUs) across 7 upazilas. In Chauhali, Tangail HQ and Nagarpur upazilas such training was conducted in 7 batches for a total of 180 CVs, grouped under 12 CDMUs; in Shahjadpur upazila in 5 batches for 110 CVs under 7 CDMUs; and in Daulatpur, Harirampur and Shibalaya upazilas in 12 batches, 315 CVs under 21 CDMUs.

During January, as per the plan, 114 flood markers were installed across including 63 across Daulatpur, Harirampur and Shibalaya upazilas; 45 across Shahjadpur and Chauhali upazilas; and 6 across Tangail HQ and

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Nagarpur upazilas. These markers were installed in consultations with the communities living in the particular locations to identify the suitable places that are most commonly seen in the entry points of floodwater during the season.

In February and March some important activities were performed. First, an online household socio-economic baseline survey of the target households in 28 unions of 7 upazilas was undertaken. The survey was designed to cover a total of 503 sample-households to be selected randomly from the list of target community households, prepared by each CV of the respective CDMUs in different wards of the unions. To conduct the survey, 10 survey- teams were formed, each consisting of two enumerators with a mixture of 9 BDPC field staffs and 11 CVs. The enumerators were imparted a 1-day hands-on training on using the user-friendly digitized questionnaire for field data collection through tablets and uploading them to the central server for constant monitoring of quality data collection. The questionnaire consisted of four sections, including section-1: background, introduction, objectives, methodology, sample area and design etc.; section-2: Further demographic and other profiles of the households; section -3: flood and erosion information and opinion collections of char people; section-4: conclusion. The uploaded field data were subject to downloading from the server soon after completion of the survey in the first week of March. Thereafter, field data processing was completed and finally 23 analytical tables were engaged the remaining days of March. It is to be noted that BDPC engaged an IT firm to perform the above tasks of programming a digitized questionnaire, tablet-based online data collection, uploading and training followed by processing of collected field data and tabulation. On completion of the survey in the first week of March, Community Risk Assessment (CRA) guidelines were prepared for preparing the households and community flood preparedness action plans. Guidelines were subject to field-testing followed by a 5-day long training on CRA conduction and validation for 18 CVs and 9 Junior Community Mobilization Experts (JCMEs) including 15 from three upazilas of Manikganj, 16 from 2 upazilas of Sirajganj and 1 from 1 upazila of Tangail districts. Furthermore, guidelines for the mass community sensitization on flood and erosion risk preparedness were also prepared followed by an orientation on those for 12 BDPC staffs including 2 Senior Community Mobilization Experts (SCMEs), 9 JCMEs and the documentation officer. The sensitization campaign includes mock drill, courtyard sessions, and discussion meetings in the educational and religious institutions, work plan and schedule.

Table 2-5 Summary of Project Introductory Meetings

SL	Date	Union/ Upazila	Venue	Participants		
				Female	Male	Total
Manikganj						
1	02-Oct-2018	Khalsi	Khalsi UP Hallroom	4	28	32
2	02-Oct-2018	Harokandi	Harokandi UP Hallroom	6	31	37
3	03-Oct-2018	Teota	Teota UP Hallroom	5	29	34
4	03-Oct-2018	Gopinathpur	Gopinathpur UP Hallroom	5	30	35
5	04-Oct-2018	Uthali	Uthali UP hallroom	7	29	36
6	07-Oct-2018	Shibalay	Shibalay UP hallroom	6	32	38
7	09-Oct-2018	Boyra	Boyra UP Hallroom	8	26	34
8	10-Oct-2018	Baghutia	Baghutia UP Hallroom	5	25	30
9	10-Oct-2018	Aruya	Aruya UP Hallroom	7	26	33
10	14-Oct-2018	Dhulshura	Dulshura UP Hallroom	3	32	35
11	10-Oct-2018	Harirampur Upazila	Upazila Hallroom	2	26	28
12	11-Oct-2018	Shibalay Upazila	Upazila Hallroom	7	45	52
13	11-Oct-2018	Daulatpur Upazila	Upazila Hallroom	3	35	38
Chowhali and Tangail						
14	03-Oct-2018	Khashpukuria	Union Parishad	4	30	34
15	04-Oct-2018	Sadia Chandpur	Union Parishad	8	28	36
16	08-Oct-2018	Nagarpur Upazila	Upazila Conference Room	7	48	55
17	11-Oct-2018	Bharra	Union Parishad	11	26	37
18	14-Oct-2018	Sthal	Union Parishad	3	32	35
19	14-Oct-2018	Khashkawlia	Union Parishad	5	32	37

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SL	Date	Union/ Upazila	Venue	Participants		
				Female	Male	Total
20	15-Oct-2018	Katuli	Union Parishad	4	31	35
21	15-Oct-2018	Omarpur	Union Parishad	6	28	34
22	16-Oct-2018	Tangail Sadar Upazila	Upazila Conference Room	9	41	50
Shahjadpur						
23	01-Oct-2018	Shahjadpur Upazila	Upazila Conference Room	2	30	32
24	02-Oct-2018	Gala	Boira Govt. Primary School	4	32	36
25	03-Oct-2018	Sonatoni	Union Parishad Hallroom	3	28	31
26	08-Oct-2018	Kaijuri	Union Parishad Hallroom	2	23	25

Table 2-6 Summary information on community sensitization meetings

Sl.	Date	Union	Venue	Male	Female	Total
1	11-Nov-2018	Ghorjan	Ghorjan Primary School	106	34	140
2	13-Nov-2018	Kashpukuria	BM High School	81	52	133
3	14-Nov-2018	Baghutia	Samudia High School	67	83	150
4	14-Nov-2018	Boalkandi	Rojina's House	3	136	139
5	15-Nov-2018	Bharra	Sahjani High School	43	109	152
6	15-Nov-2018	Kashkawlia	Nowsad's House	44	96	140
7	17-Nov-2018	Gala	Tarotia Government Primary School Field	151	103	254
8	17-Nov-2018	Purzona	Chotomoharajpur Govt. Primary School Field	45	90	135
9	18-Nov-2018	Kashkawlia	Kurki Primary School	49	98	147
10	18-Nov-2018	Sadia Chandpur	Hafijur's House	38	114	152
11	18-Nov-2018	Ramkrishnopur	Bockchar Field	41	78	119
12	19-Nov-2018	Ramkrishnopur	UP Hallroom	45	55	100
13	19-Nov-2018	Umarpur	Dattakandi High School	70	60	130
14	19-Nov-2018	Ghorjan	Ghorjan UP	29	79	108
15	19-Nov-2018	Aruya	Nali Cadet Primary School	51	68	119
16	20-Nov-2018	Sonatoni	Chotochantara Government Primary School	49	88	137
17	20-Nov-2018	Sthal	Sthal UP	53	54	107
18	20-Nov-2018	Jionpur	UP Hallroom	28	83	111
19	21-Nov-2018	Jalalpur	Syedpur Model School	59	82	141
20	21-Nov-2018	Jalalpur	Gucchogram Government Primary School	60	74	134
21	22-Nov-2018	Koijuri	Koijuri Collegepara	120	9	129
22	22-Nov-2018	Koijuri	Koijuri Madrasa Field	65	78	143
23	22-Nov-2018	Bachamara	Bazaar Field	77	81	158
24	03-Dec-2018	Kanchanpur	UP Hallroom	88	46	134
25	03-Dec-2018	Katuli	Shahabuddin's home	30	117	147
26	03-Dec-2018	Teota	Purano Poyla Primary School	75	77	152
27	04-Dec-2018	Teota	Purano Poyla Primary School	65	58	123
28	04-Dec-2018	Shibalay	Boalia Water Management Somobay Somiti	11	110	121
29	04-Dec-2018	Baghutia	Bagutia Madrasa	64	61	125
30	05-Dec-2018	Teota	Alokdia Char	72	64	136
31	06-Dec-2018	Uthali	Uthali Union Parishad	48	76	124
32	06-Dec-2018	Khalsi	Khalsi Union Parishad	9	111	120

Sl.	Date	Union	Venue	Male	Female	Total
33	07-Dec-2018	Bachamara	Bachamara Union Parishad	72	42	114
34	08-Dec-2018	Baghutia	Baghutia Union Parishad	55	79	134
35	22-Dec-2018	Harukandi	Trotrokhola Govt. Primary School	52	58	110
36	22-Dec-2018	Harukandi	Harukandi Union Parishad	77	23	100
37	22-Dec-2018	Boyra	Boyra Field	40	81	121
38	23-Dec-2018	Gopinathpur	Gopinathpur Govt. Primary School	31	81	112
39	23-Dec-2018	Gopinathpur	Bahadurabad Govt. Primary School	55	60	115
40	25-Dec-2018	Dhulsura	Ibrahimpur High school	37	45	82
Total				2,291	2,993	5,284

Table 2-7 Detail information for training batches

Sl	Date	Venue	Participants		
			Male	Female	Total
Manikganj					
1	09-13 Dec-2018	Puran Poila GPS, Shibalaya	14	15	29
2	17-21 Dec-2018	Bachamara UP Hallroom	4	11	15
3	17-21 Dec-2018	Ramkrishnopur UP Hallroom	21	9	30
4	22-26 Dec-2018	Kanchanpur UP Hallroom	10	5	15
5	23-27 Dec-2018	Shamnagar BK High School	17	10	27
Shahzadpur					
	17-21 Dec-2018	Koijuri Bazaar GPS	18	12	30
	22-26 Dec-2018	Jalalpur UP Hallroom	17	13	30
Chowhali					
	17-21 Dec-2018	BDPC Chowhali Office	15	14	29
	22-26 Dec-2018	Muradpur Dakhil Madrasa	18	11	29
Total			124	110	234

2.3.6 Capacity Building

The following capacity development activities took place during this quarter:

Workshop on Gender Equity

A daylong workshop on “Strengthening Capacity in Reporting and Monitoring of Gender Equality Result in Project Operation” was held in the ADB Bangladesh Resident Mission on 24-Oct-2018 during this quarter. The workshop shared the experience of achievements and challenges related to effective implementation, reporting and documentation of the “Gender Action Plan (GAP)” and “Project Completion Report (PCR)”. Two participants from the PMO-FRERMIP attended the workshop.

Training on Procurement Activity Monitoring Tool (PAMT)

A daylong training on “Procurement Activity Monitoring Tool (PAMT)” was held on 29-Nov-2019 in the ADB Bangladesh Resident Mission. Two personnel from PMO-FRERMIP attended the training.

ISPMC Training Activities

One Gender Awareness training and one River Survey Database Management training took place during this quarter. The details of the Gender Awareness Training can be found in the **Section 2.3.4** and the details of the River Survey Database Management Training can be found in the **Section 2.3.7**. The details of the Capacity Building Progress can be found in the **Appendix-H**.

DPP Training Activities

During this quarter one training course started in the previous quarter was completed. The status of training is reflected in **Table 2-8**.

Table 2-8 Capacity Building Progress as per RDPP (2nd Revised)

Item	Total	Completed	Remaining
A. Local Training	7	7	0
B. Overseas Training/Study Tour	9	6	3
Total	16	13	3

International Conference

Two ISPMC staff members participated in the 9th International Conference on Scour and Erosion, in Taiwan from 5 to 8 November, 2018. Apart from a key note speech on the Brahmaputra River, the team presented a paper on the latest findings on geobag stability.

2.3.7 MIS Development Activities

During the reporting quarter, the International Management Information System (MIS) Specialist spent 5 weeks in Dhaka improving the River Survey Spatial MIS Database interface and providing additional 'on-the-job' training to the proposed BWDB Database Administrator: Md. Masbahul Islam, Sub-Divisional Engineer, Design Circle-2. This valuable work experience will help ensure that the River Survey database is sustainable after handing it over to BWDB, and departure of the ISPMC. The MIS Specialist was particularly impressed with Mr. Masbah's performance and his ability to quickly understand how the database works, and how to improve its functionality.

There has been a number of significant improvements to the MIS, including the addition of 160 bathymetric surveys from the West Guide Bund of the Jamuna Bridge. Other recent developments include an integrated interface for converting and importing a batch of surveys from raw xyz-text files into PostgreSQL tables. Additional summary and detailed reports have been added to both the River Survey and ADCP (Velocity) databases. Improved 'cascading' filters have been added to both databases to facilitate selection of individual surveys. Cascading means that the filter supports more than one filter condition, and that the contents in the remaining drop-down boxes only contain valid options still available, given the filter condition already specified.

An option to calculate and display survey water levels on charts and tables, using available BWDB Water Level Station data, has also been added to the database. Available water levels have made it easy to check the validity of the bathymetric data. A quality check revealed that over 200 surveys obtained from the Special Sirajganj Right Embankment Division BWDB contained survey water depths rather than bathymetric bed levels. These surveys have recently been rectified, using the available survey water levels. At present, water levels are only available for 1194 of the 2288 surveys in the River Survey database. On 26 February 2019, a letter was written requesting BWDB Hydrology for the remaining water levels but as of the end of the reporting period, the data had not yet been received.

Raw data files related to each of the 237 surveys in the ADCP (Velocity) database have been organized and linked to the database survey records. These raw data files will facilitate possible future developments.

The River Survey Spatial MIS Database documentation has been revised to include all recent innovations. The documentation includes a brief summary, followed by 6 detailed Appendices that provide 'step-by-step' instructions on every available function in both the Bathymetric and Velocity databases:

- A ADCP (Velocity database) User Manual
- B ADCP Administrator Manual
- C River Survey (Bathymetry database) User Manual
- D River Survey Administrator Manual
- E General Spatial Topics
- F River Survey Topics

A current summary list of all surveys in the River Survey (2288) and ADCP (237) database are presented in Appendix - ??.

2.3.8 River Study

As part of the FRERMIP River Study, a large number of Technical Notes have been prepared. These Technical Notes will form Annexes to the main study documents including:

- (i) Long term strategic river stabilization plan study for the Jamuna and Padma and Lower Meghna rivers covering from the Indian border to estuary.
- (ii) Preliminary Master Plan Study for the Jamuna, Padma and Lower Meghna-Upper Meghna river system.
- (iii) Development, implantation support, and monitoring of land recovery/river training piloting schemes, including piloting using building with nature concept.
- (iv) Hydraulic and morphological analyses for the Jamuna -Meghna and Jamuna- Padma- Ganges confluences.

Apart from presenting the context at two national workshops in 2016 and 2017, the Strategic Framework was recommended for approval by the Technical Advisory Committee in September 2017 and the SESA was reviewed by a Dutch Government Organization named National Commission for Environmental Assessment (NCEA) and has been update and sent to the PMO on 09-Sep-2018 (**Ref: Memo No. ISPMC-FRERMIP-528**) reflecting the latest standard of the river stabilization plan and the regional master plan. The Technical Notes are under formatting for final submission.

The internal review of the updated draft Strategic Environmental and Social Assessment (SESA) of long-term river stabilization of the Brahmaputra-Jamuna-Padma river system was completed in early-September, and the SESA was submitted to PMO on 09-Sep-2018 (**Ref: Memo No. ISPMC- FRERMIP-528**) for further review, processing and approval.

2.3.9 Feasibility Study

Design

In the course of preparation of the feasibility study for Tranche-2, the drawings for the two embankment work packages have again been updated in close cooperation with the BWDB design office. The update for the regulators reinforcement follows the standards and practices of the BWDB

and requested changes have been made directly onto the drawing often results in increased cost due to increased quantities of reinforcement. A number of meetings were held with the BWDB design office, in which, the drawings and BWDB mark ups were discussed in detail prior to the final design office approval which was confirmed 13th January 2019. Further works are also ongoing to update the design reports and for these two packages to bring them in line with the approved design drawings. The key dates relating to the embankment designs were as follows:

1. First submission of the drawings: Mar-2018
2. Second submission of the drawings: 01-Sep-2018.
3. Meeting regarding proposed BWDB changes to JRB-1 embankment and bank protection drawings: 13-Sep-2018
4. Meeting regarding proposed BWDB changes to PLB-1 embankment and BWDB suggested bank protection drawings: 17-Sep-2018
5. Third submission of JRB-1 embankment drawings: 19-Sep-2018
6. Correction regarding second submission of JRB-1 embankment: 23-Sep-2018
7. Fourth submission of JRB-1 embankment drawings: 30-Sep-2018
8. Meeting regarding proposed BWDB changes to PLB-1 and JRB-1 embankments with SE design: 09-Oct-2018
9. Meeting regarding proposed BWDB changes to PLB-1 and JRB-1 embankment design changes with XEN: 10-Oct-2018
10. Fifth submission of PLB-1 embankment drawings: 16-Oct-2018
11. Meeting regarding proposed BWDB changes to PLB-1 and JRB-1 embankment designs with XEN design: 16-Oct-2018
12. Sixth submission of PLB-1 and fifth submission of the JRB-1 embankment drawings: 06-Nov-2018
13. Meeting regarding proposed BWDB changes to PLB-1 and JRB-1 embankments with XEN design: 10-Dec-2018
14. Final submission of embankment package designs: 20-Dec-2018

The BWDB Design Circle II proposed an alternative design for the riverbank protection and Solimabad channel in October 2018. The design for the Solimabad channel was modified following significant collaboration between ISPMC and BWDB Design Circle II and is currently in the process of development. The BWDB design for riverbank protection has not been modified and is presented as an alternative option in the feasibility report for Tranche 2.

2.3.10 ISPMC Performance Compliance with ToR

So far, the ISPMC has complied the terms and conditions defined in the “Terms of Reference (ToR)” of the consultancy contract. The compliance of ISPMC with the ToR was presented by the PD, FRERMIP before the Planning Commission. The **Appendix-E** portrays a full scenario of the ISPMC performance so far associated by the tasks defined in the ToR of the consultancy contract.

3. ADMINISTRATIVE ARRANGEMENTS

3.1 Establishment of Project Offices

The PMO and ISPMC offices are fully operational. The project management team of the ISPMC and the BWDB PMO Office are both located in the Firoz Tower, 152/3/B Bir Uttam, Kazi Nuruzzaman Road (Green Road), Dhaka-1205; on the 12th and 13th floor respectively. Dhaka. Some

responsibilities of Koitola construction division of BWDB, Bera, Pabna have been transferred to other O&M Divisions by the office order Memo No. 11/BWDB/Sec/DS (OD) on 06 March 2018.

The PMO and the three SMOs are understaffed. The following tables show the current staff employment status compared to the approved setup-

Table 3-1 PMO-FRERMIP Staffing

Post Name	No. of Posts in the approved setup	Currently appointed in the post
Project Director	1	1
Superintending Engineer	2	1
Executive Engineer	4	1
System Analyst	1	0
Sub-Divisional Engineer	2	1
Assistant Engineer	2	2
Assistant Director	1	1
Accounts Officer	1	1
Accounts Assistant	1	1
Data Entry Operator	2	1
Driver	2	2
Guard	2	2
MLSS	4	4
Total	25	18

Table 3-2 SMO-Koitola Staffing

Post Name	No. of Posts in the approved setup	Currently appointed in the post
Executive Engineer	1	1
Sub-Divisional Engineer	1	0
Assistant Engineer	1	1
Sub-Assistant Engineer	3	3
Accounts Assistant	1	0
Data Entry Operator	1	0
Revenue Surveyor	1	0
Work Assistant	3	1
Guard	1	2
MLSS	1	1
Total	15	9

Table 3-3 SMO-Tangail Staffing

Post Name	No. of Posts in the approved setup	Currently appointed in the post
Executive Engineer	1	1
Sub-Divisional Engineer	1	1
Assistant Engineer	1	0
Sub-Assistant Engineer	2	1
Accounts Assistant	1	1
Data Entry Operator	1	1
Revenue Surveyor	1	1
Work Assistant	2	1
Guard	1	1

MLSS	2	2
Total	13	10

Table 3-4 SMO-Manikganj Staffing

Post Name	No. of Posts in the approved setup	Currently appointed in the post
Executive Engineer	1	1
Sub-Divisional Engineer	2	1
Assistant Engineer	1	1
Sub-Assistant Engineer	3	3
Accounts Assistant	1	1
Data Entry Operator	1	1
Revenue Surveyor	1	1
Work Assistant	3	3
Guard	1	0
MLSS	2	2
Total	16	14

Appendix-C Utilization of Consultant Person-Months details the man-months spent by all international and national specialists to the end of the reporting period, which includes information from the Variation Order-2 (VO) for the ISPMC. According to the proposed Variation Order-2, up to the end of the June 2018, a total of 41 international specialists have expended 255 of 309 total person-months (83% of total), and 35 national specialists have expended 465 of 495 person-months (94% of total).

3.2 Compliance with Loan and Grant Agreement Covenants

Schedule 5 of the FRERMIP Loan Agreement (**Ref. 6**) contains a set of 32 specific covenants to be followed during project implementation. These 32 covenants are documented in **Appendix-G**, together with a column for compliance, and a column that provides evidence to support the compliance value. Out of the 32 covenants: 24 are being complied, 5 are to be complied and 3 have been already complied.

3.3 Important Events During This Quarter:

01-Nov-2018	Planning Commission approves the 2 nd revised DPP
05-Nov-2018	ADB's approval for extension of loan and grant closing date from 30-Jun-2019 to 30-Jun-2020 for FRERMIP (Tranche-1) project.
5-8 Nov 2018	International Conference on Scour and Erosion, Taiwan
19-Nov-2018	6 th Project Steering Committee Meeting to resolve the implementation problems and assess the overall progress for FRERMIP, presided by the Secretary, Ministry of Water Resources

4. FINANCIAL ARRANGEMENTS

4.1 *Statements of Expenditure*

Using the project implementation database, and with help from the PMO- FRERMIP, the ISPMC monitors project financial progress including: all ADB (and GON) disbursements (deposits) to the project, PMO- FRERMIP expenditures paid to contractors and suppliers, and all reimbursement bill applications approved by ADB.

Table A-5 shows cumulative totals up to December for progress, expenses and reimbursements, for all DPP categories. This table also includes the 2018/19 fiscal targets (and fiscal progress) as define in the provisional ADP (Annual Development Program).

PMO- FRERMIP expenditures by individual contract are provided in **Table B-5**. Only the total expenditure values are exactly correct. The individual donor values have been calculated using total expenditure values and the percent distribution by financial component.

Financial reimbursement on an individual contract basis is shown in **Table B-6**. The table shows the total bill claim amount, plus the reimbursed amount (BDT) by both ADB and GON. A summary of reimbursement applications for line of credit (L/C), direct payment, and imprest amounts is shown in **Table B-7**. This table also shows the total bill amount claimed and the reimbursement amounts paid by ADB and GON in both BDT and US\$.

Reimbursement values (BDT) are also summarized by ADB Financial Category (**Table A-3**), and by DPP Component (**Table A-4** and **A-5**).

Table B-8 shows the total ADB (plus GON) disbursement (deposits) to the project. Total disbursement is the addition of all deposits to the ADB Loan Account and the Grant Imprest Account, plus the ADB and GON portions of all reimbursed Direct Payment and L/C applications.

A summary of the financial progress is also available in **Table 1-1** which shows that the progress of PMO expenditure is 69%, the ADB disbursement is 53 % of the total project cost and the total reimbursement is 44%. The history of project disbursements and reimbursements (US\$) is shown in Figure 2-1 in **Section 2.1**.

5. ISSUES FOR DISCUSSION AND AGREEMENT

5.1 Chauhali slope instability failure investigation

22nd February 2019

Two failures occurred at chainage 4883 to 4915 km (32m) on 22nd February 2019 and chainage 4938 to 5046 (108m) on 25th February 2019. The first failure was at previously placed concrete block wave protection whilst the second failure extended 42m into the temporary geobag wave protection, protecting the upstream end of the upper slope between chainage 5,000 and 7,000.

Two failure mechanisms can be considered:

- (i) As in previous cases, the berm consisting of weak soil has eroded and consequently the support for the upper slope has been lost, resulting in slippage of the placed concrete blocks.
- (ii) The underwater apron has eroded, and the erosion has progressed through the whole width of the placed underwater apron (some 40m wide with 5 layers of geobags).
- (iii) Analysis of the river survey and the cross sections shows:
- (iv) The erosion has occurred only during the dry season and is associated with the dry season channel pattern (Figure 5-1).
- (v) The underwater slope is mostly unaffected, as the apron, launched in 2016, has neither been reached nor eroded further than the maximum reached during the 2016 flood (Table 5-1).

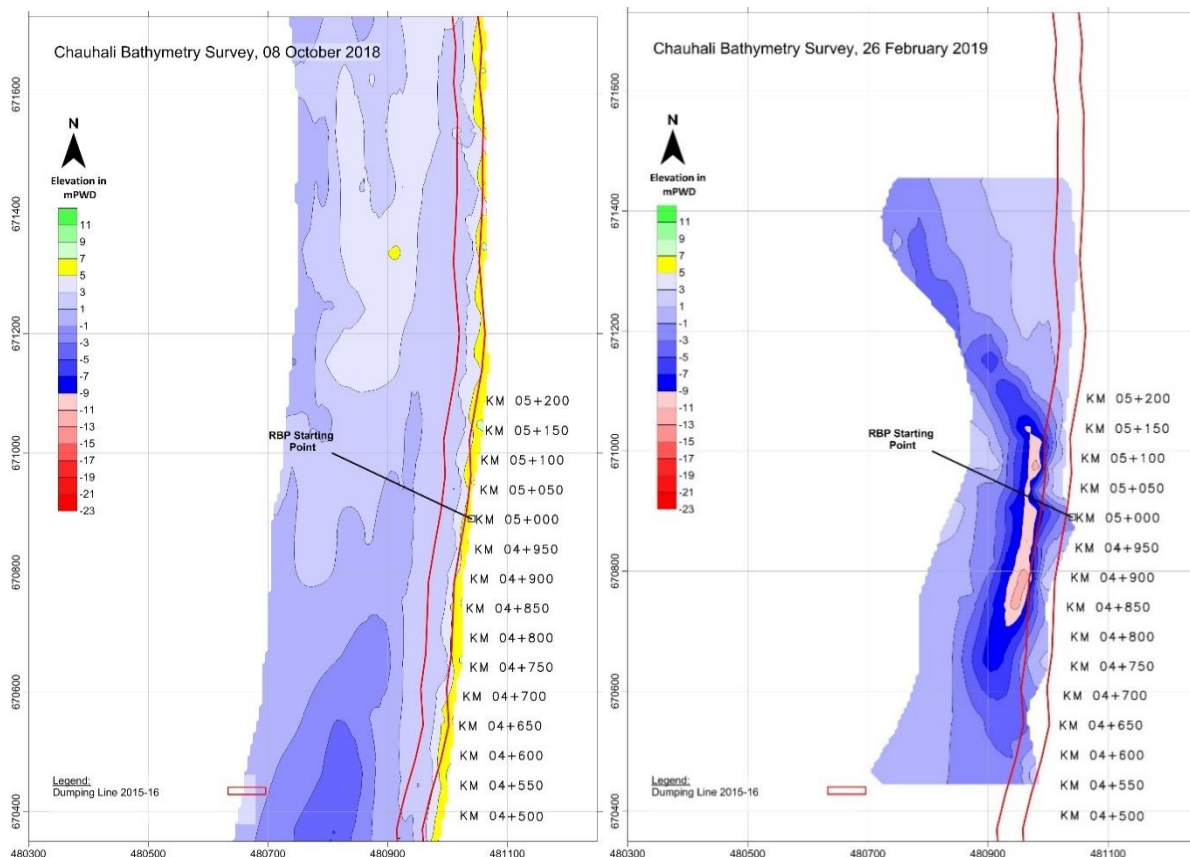
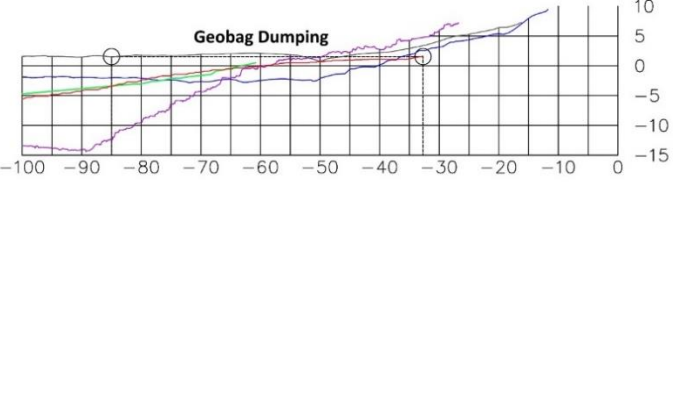
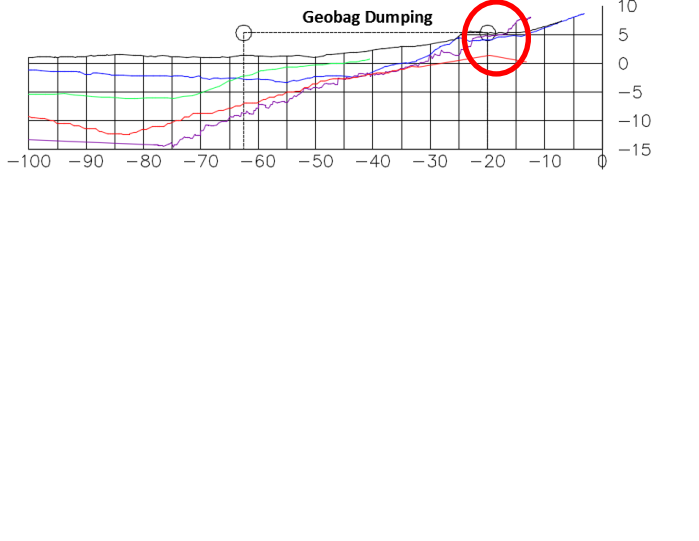
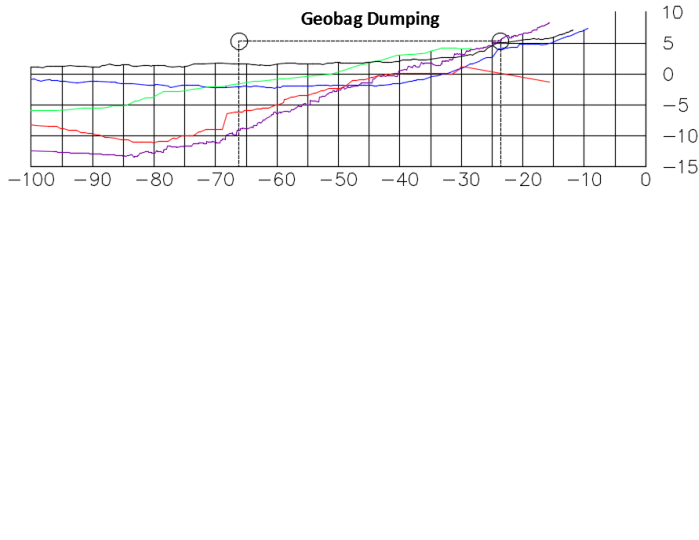


Figure 5-1 Comparison of October 2018 and February 2019 survey (February 2019 survey was carried out as a response to the failures and in the vicinity of the February 2019 failures only)

Table 5-1 Survey Cross-Sections in vicinity of failures (ISPMC, 26th Feb 2019)

Flood and Riverbank Erosion Risk Management Investment Program (FRERMIP), Project-1

Chainage	Cross-Section	Description
4750		<p>No failures have occurred and the launched geobag apron has only been reached in the upper part above 1m PWD.</p> <p>Please note that the 26th February 2019 (red) line stops abruptly near the bank due to the presence of cc blocks preventing surveying any closer to the bank</p>
4850		<p>Failure of the upper slope up to 5m below low water level (5m PWD) can be seen in comparison to the September 2016 survey data immediately following apron launching</p> <p>At -5m PWD the lower slope has resisted angular flow attack and eroded only up to the geobag apron level. Below this a thin layer of sediment deposition remains above the launched geobag apron.</p>
4950		<p>Failure of the upper slope up to 4m below low water level can be seen in comparison to the September 2016 survey data immediately following apron launching</p> <p>At 0m PWD the lower slope has resisted angular flow attack and eroded only up to the geobag apron level. Below this a thin layer of sediment deposition remains above the launched geobag apron.</p>

The failure is associated with the failure of the berm (cross sections 4800 to 5100). This is in line with earlier observed failures (see memo 31 July 2018 – ISPMC-FRERMIP-522), particularly as the concrete blocks were dumped on loose soil, bulldozed from the bank into the river to create a loose berm, expected to support the upper slope protection. Some cross sections even show steep upper slope of the loose material under the berm (red circles in cross sections 4850 and 5050) particularly in September 2016 after construction.

Only cross section 5000 shows erosion into the launched apron. The assumption that this is a result of erosion through nearly 35m of placed apron is not supported by the typically low flow velocities. It is

Flood and Riverbank Erosion Risk Management Investment Program (FRERMIP), Project-1

rather an indication of a geotechnical mass failure, which is the only mechanism that is able to displace the five-layer protection. Any failure of this kind indicates the weak subsoil composition, as further confirmed through additional boreholes conducted in the area in 2016 and 2017.

Chainage 5000 was in the location of the second failure that occurred 3 days after the first thereby giving credence to the theory that the upper berm failure triggered a deep-seated slip failure that caused this location to fail due to weak underlying soils rather than that this area of the bank suffered a failure mechanism that was unique amongst the remaining sections. The failure mechanism is therefore considered to be angular flow attack in a localized area combined with a geotechnical unravelling of the berm due to poor construction, a heavy berm due to the dumping of concrete blocks and weak underlying base soils.

These cross-sections show that the majority of the failures related to the upper slope only with the exception of Chainage 5000 where a short length of the top of the lower slope failed alongside the upper slope. Cross-sections at chainage 4850 to 4950 and 5050 to 5100 show that the underwater slope with previous geobag coverage remains both fully intact following erosion and higher than the post apron launching level following the 2016 flood season. Consequently, the failure is associated with the erosion of the berm, as observed in other places and consequently slippage of the concrete block slope protection.

It is understood from information collected by the ISPMC from the Tangail SO Jalal Uddin on 5th March 2019 that the following dumping is currently underway using Non-Development Revenue (NDR) funds:

- Chainage 4.883 to 4.935, 5 layers of geobags, 15m wide apron
- Chainage 4.938 - 5.000, 5 layers of geobags (+ additional geobags to fill void), 15m wide apron
- Chainage 5.000 - 5.046, 5 layers of geobags (+additional geobags to fill void), 15m wide apron

Completion of Construction Works

Both the embankment construction as well as the pilot works remain on the critical path of completion prior to the 2019 flood season. Completion of land acquisition and resettlement remains a critical aspect. The pilot works requires monitoring during the flood season 2019, beyond the contract completion date. The contractor is expected to make arrangements with BUET for providing extended services.

6. REFERENCES

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6. ADB, 2014: Loan Agreement, Flood and Riverbank Erosion Risk Management Investment Program - Project 1, between People's Republic of Bangladesh and Asian Development Bank, 2014 August 14
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Appendix-A Work Program Summaries

Table A-1 Project Program Summary Quantity (Units)

Component	Asset Type	Units	BWDB	DDM	MAN	KOI	TAN	Totals
A: Civil Works								
A1: Embankment Works	Cons/ReCon: Embank	km	0.0	0.0	0.0	8.8	0.0	8.8
	New: Embank	km	0.0	0.0	0.0	12.5	0.0	12.5
	New: Infrastr	BDTM	0.0	0.0	7.8	0.0	0.0	7.8
	New: Regulator	No	0.0	0.0	0.0	4.0	0.0	4.0
A2: Riverbank Prot Works	New: Revetment	km	0.0	0.0	10.8	0.0	7.0	17.8
A3: Emerg & Adaptation	Emerg: AdpRivProt	BDTM	67.0	0.0	0.0	0.0	0.0	67.0
A4: Pilot Land Recovery	New: RivTrnWrk	BDTM	468.0	0.0	0.0	0.0	0.0	468.0
B: Materials								
B1: Geotextile, Civil Works	Procure: GeoBag	Mil	0.0	0.0	2.7	0.0	1.9	4.7
B2: Geotextile, Emerg	Procure: AdpGeoBag	Mil	0.0	0.0	1.3	0.0	0.0	1.3
C: Vehicles & Equipment								
C1: Vehicles/Transport	Procure: Veh/Trans	No	15.0	0.0	0.0	0.0	0.0	15.0
C2: Office Equipment	Procure: Equip	BDTM	4.4	0.0	0.0	0.0	0.0	4.4
C3: Survey Equipment	Procure: Equip	BDTM	6.7	0.0	0.0	0.0	0.0	6.7
C4: DDM Office Eqpt	Procure: Equip	BDTM	0.0	0.5	0.0	0.0	0.0	0.5
D: Consulting Services								
D1: ISPM; Consultant Serv.	Service: Feasi.Stud	BDTM	170.0	0.0	0.0	0.0	0.0	170.0
	Service: Instit.Cap	BDTM	387.0	0.0	0.0	0.0	0.0	387.0
	Service: Riv.Stabil	BDTM	461.0	0.0	0.0	0.0	0.0	461.0
D2: INGO BWDB	Service: Resettle.S	BDTM	17.5	0.0	0.0	0.0	0.0	17.5
D3: INGO DDM	Service: CBFRM	BDTM	0.0	50.5	0.0	0.0	0.0	50.5
D4: Survey & Investigation	Service: Eros.Pred	BDTM	28.9	0.0	0.0	0.0	0.0	28.9
E: Capacity Development								
E1: BWDB Training & Study	Service: Training	BDTM	76.9	0.0	0.0	0.0	0.0	76.9
F: Land Acqn & Resettle								
F1: Land Compensation	Compensate: Land.Acqu	BDTM	2,083.	0.0	0.0	0.0	0.0	2,083.
F2: Resettle Benefits	Compensate: Resettle.B	BDTM	90.0	0.0	0.0	0.0	0.0	90.0
G: Program Management								
G1: Staff Salaries BWDB	Service: Prog.Mngt	BDTM	83.7	0.0	0.0	0.0	0.0	83.7
G2: Office Opns BWDB	Service: Prog.Mngt	BDTM	32.3	0.0	0.0	0.0	0.0	32.3
G3: Office Opns DDM	Service: Prog.Mngt	BDTM	0.0	2.1	0.0	0.0	0.0	2.1
G4: BWDB River Surveys	Service: Riv.Surv	BDTM	7.8	0.0	0.0	0.0	0.0	7.8
	Service: LandSurvey	BDTM	0.2	0.0	0.0	0.0	0.0	0.2
X: Misc. Costs								
X1: Misc. Costs	Compensate: CD&SD	BDTM	12.1	0.0	0.0	0.0	0.0	12.1
	Compensate: Interest	BDTM	199.2	0.0	0.0	0.0	0.0	199.2
	Service: Hon.Allow	BDTM	0.8	0.0	0.0	0.0	0.0	0.8

Abbreviations:

DDM - Department of Disaster Management

MAN - Manikganj SMO

KOI - Koitola SMO

TAN - Tangail SMO

The unit BDTM refers to an estimated total cost of Bangladesh Taka 1 Million.

Table A-2 Project Cost Summary

Cost (BDT Mil)

Component	Asset	BWDB	DDM	MAN	KOI	TAN	Totals
A: Civil Works							
A1: Embankment Works	Cons/ReCon: Embank	0	0	0	486	0	486
	New: Embank	0	0	0	463	0	469
	New: Infrastr	0	0	8	0	0	8
	New: Regulator	0	0	0	254	0	247
A2: Riverbank Prot Works	New: Revetment	0	0	1,034	0	829	1,864
A3: Emerg & Adaptation	Emerg: AdpRivProt	67	0	0	0	0	67
A4: Pilot Land Recovery	New: RivTrnWrk	468	0	0	0	0	468
							3,609
B: Materials							
B1: Geotextile, Civil Works	Procure: GeoBag	0	0	732	0	323	1,054
B2: Geotextile, Emerg	Procure: AdpGeoBag	0	0	259	0	0	259
							1,313
C: Vehicles & Equipment							
C1: Vehicles/Transport	Procure: Veh/Trans	35	0	0	0	0	35
C2: Office Equipment	Procure: Equip	4	0	0	0	0	4
C3: Survey Equipment	Procure: Equip	7	0	0	0	0	7
C4: DDM Office Eqpt	Procure: Equip	0	0	0	0	0	0
							47
D: Consulting Services							
D1: ISPM; Consultant Serv.	Service: Feasi.Stud	170	0	0	0	0	170
	Service: Instit.Cap	387	0	0	0	0	387
	Service: Riv.Stabil	461	0	0	0	0	461
D2: INGO BWDB	Service: Resettle.S	18	0	0	0	0	18
D3: INGO DDM	Service: CBFPM	0	51	0	0	0	51
D4: Survey & Investigation	Service: Eros.Pred	30	0	0	0	0	30
							1,116
E: Capacity Development							
E1: BWDB Training & Study	Service: Training	77	0	0	0	0	77
							77
F: Land Acqn & Resettle							
F1: Land Compensation	Compensate: Land.Acqu	2,083	0	0	0	0	2,083
F2: Resettle Benefits	Compensate: Resettle.B	90	0	0	0	0	90
							2,173
G: Program Management							
G1: Staff Salaries BWDB	Service: Prog.Mngt	84	0	0	0	0	84
G2: Office Opns BWDB	Service: Prog.Mngt	32	0	0	0	0	32
G3: Office Opns DDM	Service: Prog.Mngt	0	2	0	0	0	2
G4: BWDB River Surveys	Service: Riv.Surv	8	0	0	0	0	8
	Service: LandSurvey	0	0	0	0	0	0
							126
X: Misc. Costs							
X1: Misc. Costs	Compensate: CD&SD	12	0	0	0	0	12
	Compensate: Interest	199	0	0	0	0	199
	Service: Hon.Allow	1	0	0	0	0	1
							212
Grand Totals		4,233	53	2,032	1,203	1,152	8674

Abbreviations:

DDM - Department of Disaster Management

MAN - Manikganj SMO

KOI - Koitola SMO

TAN - Tangail SMO

Table A-3 ADB Categories: Reimbursed Amount, by Development Partner
Value of

all Values in BDT Mil

Code	Categories	Total Cost Est.	Physical Progress	PMO Expenses	Reimbursed Amount		
					ADB	GON	Total
<i>Component</i>							
1	Works	3,609.2	2,293.8	2,192.9	1,909.7	0.0	1,909.7
2	Materials	1,312.9	1,279.3	1,278.8	1,207.9	0.0	1,207.9
3A	Vehicles - BWDB	34.9	34.9	34.9	1.5	0.0	1.5
3B	Equipment - BWDB	11.1	11.1	11.1	10.6	0.0	10.6
3C	Equipment -DDM	0.5	0.5	0.5	0.5	0.0	0.5
4	Resettlement	90.0	90.0	66.9	27.7	0.0	27.7
5	Training	76.9	73.0	67.1	54.2	0.0	54.2
6A	Consulting Services - Project Management - BWDB	1,018.2	873.9	667.0	82.4	468.8	551.2
6B	Consulting Services - NGO Services - BWDB	46.4	43.4	34.3	26.8	0.0	26.8
6C	Consulting Services - Project Management - DDM	50.6	5.1				
7A	Project Management - BWDB	40.3	29.9	23.7	21.0	0.0	21.0
7B	Project Management - DDM	2.1	1.7	1.2	0.4	0.0	0.4
8	Interest	199.2	139.4	120.0			
9	Unallocated	2,178.9	2,081.7	1,443.2			
Grand Total		8,671.9	6,957.8	5,941.6	3,342.7	468.8	3,811.5

Table A-4 DPP Categories: Reimbursed Amount, by Development Partner

all Values in BDT Mil

Code	Categories	Total Cost Est.	Physical Progress	PMO Expenses	Reimbursed Amount		
					ADB	GON	Total
Revenue Component							
3111201, 3111310, 3111325, 3111335	PMO Salaries and Allowances	83.7	61.1				
3111332	Honorarium Allowances	0.8	0.0				
3211103	Resettlement Support Program	90.0	90.0	66.9	27.7	0.0	27.7
3231101, 3231201	Capacity Development Program	76.9	73.0	67.1	54.2	0.0	54.2
3257101	ISPMC; Implementation Consultant Services	387.3	329.2	253.7	31.3	178.3	209.7
3257101	ISPMC; River Stabilization and Land Recovery Study	461.2	392.1	302.2	37.3	212.4	249.7
3257101	ISPMC; Feasibility of Tranch-2/3 Project	169.6	152.7	111.1	13.7	78.1	91.8
3257101	Resettlement Implementation Support	17.5	14.6	10.3	5.9	0.0	5.9
3257101	Community-based Flood Management Program (DDM)	50.6	5.1				
3257104	Land/River Survey and Data Processing	8.0	6.3	4.4	0.4	0.0	0.4
3257104	Survey and Investigation Data Processing	29.9	28.9	24.0	21.0	0.0	21.0
3111302, 3111329, 3111332, 3111338, 3211119, 3211125, 3211128, 3211129, 3241101, 3243101, 3243102, 3255101, 3255105, 3256101, 3258104, 3258107, 3258101, 3258140, 3258129, 3255102, 3255104	PMO Operational Expenses	32.3	23.6	19.2	20.6	0.0	20.6
(same as PMO Operational Expenses)	PMU DDM Operational Expenses	2.1	1.7	1.2	0.4	0.0	0.4
3221110, 3411101	Interest & Service Charge for Netherland Grant	199.2	139.4	120.0			
Revenue Totals		1,608.1	1,317.6	980.2	212.5	468.8	681.3
Capital Component							
3821104, 3821101	CD and SD	12.1	0.0				
4111201	Construction of Inspection Bangalow at Manikganj	7.8	3.9	0.7	0.6	0.0	0.6
4111307	Regulator/Sluice Construction in JRB1 Sub-project Area	253.7	98.8	40.4	31.2	0.0	31.2
4111321	Embankment along the Right Bank of Jamuna and the Left Bank of Baral-Hurasagar (27,38,118.66 Cum)	949.2	240.7	202.9	107.3	0.0	107.3
4111321	Protective Works at Left Bank of Jamuna at Chauhali, Nagarpur, Tangail Sadar, Zafarganj & at Left Bank of Padma at Harirampur	2917.9	2917.9	2,920.4	2,738.8	0.0	2,738.8
4111321	Adaptive Protection and Emergency	325.5	291.9	275.0	239.7	0.0	239.7
4111321	Land Recovery/River Training Works	467.9	19.8	32.2			
4112101	Motor Vehicle (Jeep 5 unit, Motorcycle 10 unit)	34.9	34.9	34.9	1.5	0.0	1.5
4112202, 4112310, 4113301	Computer and Office Equipment BWDB	4.4	4.4	4.4	4.2	0.0	4.2
4112202, 4112310, 4113301	Computer and Office Equipment DDM	0.5	0.5	0.5	0.5	0.0	0.5
4112304	Survey Equipment	6.7	6.7	6.7	6.4	0.0	6.4
4141101	Land Acquisition	2,083.1	2,020.6	1,443.2			
Capital Totals		7,063.9	5,640.2	4,961.4	3,130.2	0.0	3,130.2
Grand Total		8671.9	6957.8	5,941.6	3,342.7	468.8	3,811.5

Table A-5 DPP Categories: Key Physical and Financial Indicators

all Values in BDT Mil

Code	Categories	Total Cost		Total to December 2018		
		Budget (RDPP)	Revised Est.	Progress	Expenses	Reimburs
Revenue						
3111201, 3111310, 3111325, 3111335	PMO Salaries and Allowances	83.7	83.7	61.1	0.0	0.0
3111332	Honorarium Allowances	0.8	0.8	0.0	0.0	0.0
3211103	Resettlement Support Program	90.0	90.0	90.0	66.9	27.7
3231101, 3231201	Capacity Development Program	76.9	76.9	73.0	67.1	54.2
3257101	ISPMC; Implementation Consultant Services	387.3	387.3	329.2	253.7	209.7
3257101	ISPMC; River Stabilization and Land Recovery Study	461.2	461.2	392.1	302.2	249.7
3257101	ISPMC; Feasibility of Tranch-2/3 Project	169.7	169.6	152.7	111.1	91.8
3257101	Resettlement Implementation Support	17.5	17.5	14.6	10.3	5.9
3257101	Community-based Flood Management Program (DDM)	50.6	50.6	5.1	0.0	0.0
3257104	Land/River Survey and Data Processing	8.0	8.0	6.3	4.4	0.4
3257104	Survey and Investigation Data Processing	28.9	28.9	28.9	24.0	21.0
3111302, 3111329, 3111332, 3111338, 3211119, 3211125, 3211128, 3211129, 3241101, 3243101, 3243102, 3255101, 3255105, 3256101, 3258104, 3258107, 3258101, 3258140, 3258129, 3255102, 3255104	PMO Operational Expenses	32.3	32.3	23.6	19.2	20.6
(same as PMO Operational Expenses)	PMU DDM Operational Expenses	2.1	2.1	1.7	1.2	0.4
3221110, 3411101	Interest & Service Charge for Netherland Grant	199.2	199.2	139.4	120.0	0.0
		1,608.1	1,608.1	1,317.6	980.2	681.3
Capital						
3821104, 3821101	CD and SD	12.1	12.1	0.0	0.0	0.0
4111201	Construction of Inspection Bangalow at Manikganj	7.8	7.8	3.9	0.7	0.6
4111307	Regulator/Sluice Construction in JRB1 Sub-project Area	247.7	253.7	98.8	40.4	31.2
4111321	Embankment along the Right Bank of Jamuna and the Left Bank of Baral-Hurasagar (27,38,118.66 Cum)	955.2	949.2	240.7	202.9	107.3
4111321	Protective Works at Left Bank of Jamuna at Chauhali, Nagarpur, Tangail Sadar, Zafarganj & at Left Bank of Padma at Harirampur	2,920.4	2917.9	2917.9	2,920.4	2,738.8
4111321	Adaptive Protection and Emergency	325.5	325.5	291.9	275.0	239.7
4111321	Land Recovery/River Training Works	467.9	467.9	19.8	32.2	0.0
4112101	Motor Vehicle (Jeep 5 unit, Motorcycle 10 unit)	34.9	34.9	34.9	34.9	1.5
4112202, 4112310, 4113301	Computer and Office Equipment BWDB	4.4	4.4	4.4	4.4	4.2
4112202, 4112310, 4113301	Computer and Office Equipment DDM	0.5	0.5	0.5	0.5	0.5
4112304	Survey Equipment	6.7	6.7	6.7	6.7	6.4
4141101	Land Acquisition	2,083.1	2,083.1	2,020.6	1,443.2	0.0
		7,066.4	7063.9	5,640.2	4,961.4	3,130.2
Totals		8,674.4	8671.9	6,957.8	5,941.6	3,811.5

Appendix-B Work Program Details

Table B-1 Design Progress Details

Description	<u>Design Data Collection</u>			<u>Prog (%)</u>		Remarks
	Total	Surv	Hydraul	Geotech	Desn	
Component A: Civil Works						
<i>BWDB PMO</i>						
Emerg: AdpRivProt: 67 BDTM: Emergency/Adaptive 1: Riverbank Protection	c	c	na	100	100	Desn. & Dwg. Complete
New: RivTrnWrk: 322 BDTM: River Training Pilot Work: & Land Recovery	c	c	na	100	100	Desn. & Dwg. Complete
New: RivTrnWrk: 146 BDTM: Shahzadpur Piloting Jute Mattress	c	c	c	0	0	All Geotech Data Recd
<i>BWDB PMO Totals</i>	3	3	3	3	2	2
<i>Koitola SMO</i>						
Cons/ReCon: Embank: 4.8 km: Embankment Reconst. (4.8 km): Baghabari - Verakhola; km 12.5-17.3	c	c	na	100	100	Desn. & Dwg. Complete
Cons/ReCon: Embank: 4 km: Embankment Reconst. (5.7 km): Baghabari - Verakhola; km 17.3-23	c	c	na	100	100	Desn. & Dwg. Complete
New: Embank: 5 km: Embankment (5 km): Kajjuri - Bhatpara; km 0-5	c	c	na	100	100	Desn. & Dwg. Complete
New: Embank: 3.5 km: Embankment (3.5 km): Bhatpata - Gala; km 5-8.5	c	c	na	100	100	Desn. & Dwg. Complete
New: Embank: 4 km: Embankment (4 km): Gala - Verakhola; km 8.5-12.5	c	c	na	100	100	Desn. & Dwg. Complete
New: Regulator: 1 No: Kajjuri Reg 2V 1.5x1.8m: Kojjuri	c	c	c	100	100	Desn. & Dwg. Complete
New: Regulator: 1 No: Rohindakandi Reg 2V 1.5x1.8m: Ruhindakandi	c	c	c	100	100	Desn. & Dwg. Complete
New: Regulator: 1 No: Verakhola Reg 2V 1.5x1.8m: Verakhola	c	c	c	100	100	Desn. & Dwg. Complete
New: Regulator: 1 No: Andhar Manik Reg 4V 1.5x1.8m: Andharmanik	c	c	c	100	100	Desn. & Dwg. Complete
<i>Koitola SMO Totals</i>	9	9	9	9	9	9
<i>Manikganj SMO</i>						
New: Infrastr: 7.8 BDTM: Construction of Inspection Bungalow	c	na	na	100	100	Desn. & Dwg. Complete
New: Revetment: 2 km: Revetment (2 km): Zaffarganj; km 6.1-8.1	c	c	na	100	100	Desn. & Dwg. Complete
New: Revetment: 3.6 km: Revetment (3.6 km): Harirampur; km 0-3.5	c	c	na	100	100	Desn. & Dwg. Complete
New: Revetment: 5.2 km: Revetment (5.2 km): Harirampur; km 3.5-7	c	c	na	100	100	Desn. & Dwg. Complete
<i>Manikganj SMO Totals</i>	4	4	4	4	4	4
<i>Tangail SMO</i>						
New: Revetment: 2.5 km: Revetment (2 km): Chauhali; km 0- 2.5	c	c	na	100	100	Desn. & Dwg. Complete
New: Revetment: 4.5 km: Revetment (4.5 km): Chauhali; km 2.5-7.0	c	c	na	100	100	Desn. & Dwg. Complete
<i>Tangail SMO Totals</i>	2	2	2	2	2	2
Component Totals	18	18	18	18	17	17

Legend:

n - not commenced c - completed
p - partially completed na - not applicable/required

Table B-2 Tender Progress Details

Package		Dates														
Code	Description	ISPMC	ADB	Eoi	Eoi	BWDB	Eoi	ADB	Eoi	ADB	Tender	Tender	Eval.	ADB	Appr.Compl.	Notif.
		ToR	ToR	Notice	Received	Eval	Eval.	Bid Doc.	Notice	Received	Comp.	Concur.	Authority	Award		
Project Totals		2	4	3	3	2	1	22	30	30	27	27	26	30		

Abbreviations: ADB - Asian Development Bank
 BDT - Bangladesh Taka
 Comp. - Completion
 Concur. - Concurrence
 Doc. - Document
 Eval. - Evaluation
 Eoi - Expression of Interest
 Notif. - Notification
 ToR - Terms of Reference

Table B-3 Implementation Progress Details, by Contract

Contract Code	Description	Contractor	Best Estimate of Final Cost	Value of Cumulate Progress					Remarks
				during	28-Feb-2019	31-Mar-2019			
				Mth%	Current Mth	Next Mth	(%)	(BDT Mil)	
			(BDT Mil)	(%)	(BDT Mil)	(%)	(BDT Mil)		
Goods									
B: Materials									
G-01	Supply of Geobags: Chouhali, Sirajganj	BJ Geo-Textile	322.6	0	100	322.6	100	322.6	Implementation Complete
G-02	Supply of Geobags: Zaforganj, Harirampur, Manikganj	BJ Geo-Textile	417.8	0	100	417.8	100	417.8	Implementation Complete
G-03	Supply of Geobags: Harirampur, Manikganj	DFL-DCTL(JV)	314.0	0	100	314.0	100	314.0	Implementation Complete
G-04	Supply of Geobags: Chauhali-Harirampur-Kojjuri-Benotia	DIRD	258.5	0	87	224.9	100	258.5	Implementation Started
Component Totals			1,312.9			1,279.3		1,312.9	
C: Vehicles & Equipment									
G-05	2016 Supply of Jeep:	Pacific Motors Ltd.	5.5	0	100	5.5	100	5.5	Implementation Complete
G-06.1	2015 Supply of Jeeps:	Progoti Industries	21.2	0	100	21.2	100	21.2	Implementation Complete
G-06.2	2016 Supply of Jeep:	Progoti Industries	6.9	0	100	6.9	100	6.9	Implementation Complete
G-06.3	2016 Supply of Motorcycles:	Atlas Bangladesh Ltd.	1.3	0	100	1.3	100	1.3	Implementation Complete
G-07.1	2015 Office Equipment: BWDB PMO	Logitech Computer Ltd.	2.2	0	100	2.2	100	2.2	Implementation Complete
G-07.2	2016 Office Equipment: BWDB PMO	Source & Service	2.2	0	100	2.2	100	2.2	Implementation Complete
G-08	2016 Supply of Survey Equipments:	Logitech Computers Ltd.	6.7	0	100	6.7	100	6.7	Implementation Complete
G-09	2017 Supply of Office Equip; DDM: DDM	DDM	0.5	0	100	0.5	100	0.5	Implementation Complete
Component Totals			46.5			46.5		46.5	
Goods Totals			1,359.4			1,325.8		1,359.4	
Services									
D: Consulting Services									
S-01	ISPMC; Tranche 1:	NHC (JV) Mott MacDonald	1,018.2	0	86	873.9	91	924.8	Implementation Started
S-02	Resettlement Implementation Support: Sirajganj, Tangail, Manikganj	VRDS-HCL-JV	16.2	0	90	14.6	100	16.2	Implementation Started
S-02A	External Monitor for Resettlement:		1.3	0	0	0.0	0	0.0	Contract Not Yet Started
S-04	Community Based Flood Risk Mngmt: DDM	BDPC	50.6	0	10	5.1	35	17.7	Implementation Started
S-06.1	2015 Erosion & Morphological Chg:	CEGIS	4.6	0	100	4.6	100	4.6	Implementation Complete
S-06.2	2016 & 2017 Erosion Prediction:	CEGIS	25.3	0	100	25.3	100	25.3	Implementation Complete
Component Totals			1,116.1			923.4		988.6	
Services Totals			1,116.1			923.4		988.6	
Works									
A: Civil Works									
W-01	Embankment, & 2 Reg.: km 0-5	Md. Moyenuddin (Bashi)-Gol	323.0	0	26	83.7	29	92.8	Construction Started
W-02	Embankment: km 5-8.5	Taher Brothers Ltd.-MA Ente	118.2	0	42	49.7	50	59.1	Construction Started
W-03	Embankment: 8.5-12.5	Taher Brothers Ltd.-MA Ente	112.3	0	45	50.5	50	56.1	Construction Started
W-04	Embankment & 1 Regulator: km 12.5-17.3	HB-SSECL (JV)	362.4	0	30	109.4	63	229.0	Construction Started
W-05	Embankment & 1 Regulator: km 17.3-21.3	Md. Moyenuddin (Bashi)-Gol	287.1	0	16	46.2	32	92.3	Construction Started
W-06	Revetment: Jamuna at Chauhali, R1; km 0-2.5	I-J (JV)	422.1	0	100	422.1	100	422.1	Construction Complete
W-07	Revetment: Jamuna at Chauhali, R2; km 2.5-7.0	I-J (JV)	407.2	0	100	407.2	100	407.2	Construction Complete
W-08	Revetment: Jamuna at Zaffarganj, km 6.1-8.1	WEL-NZK-PTSL (JV)	466.9	0	100	466.9	100	466.9	Construction Complete
W-09	Revetment: Padma at Harirampur, R1; km 6.7-10.2	M.M.Builders & Engineers Lt	309.0	0	100	309.0	100	309.0	Construction Complete
W-10	Revetment: Padma at Harirampur, R2; km 3.2-6.7	M.M.Builders & Engineers Lt	258.4	0	100	258.4	100	258.4	Construction Complete
W-11	Emergency/Adaptive 1: Riverbank Protection	M/S. Hassan & Brothers	67.0	0	100	67.0	100	67.0	Construction Complete
W-14	River Training Pilot Work: Manikganj, Tangail, Sirajganj	JV Khondoker Shaheen Ahm	330.0	0	6	20.3	20	66.0	Construction Started
W-15	Construction of Inspection Bungalow: Manikganj	MS Builders	7.8	0	50	3.9	80	6.2	Construction Started
W-16	Shahzadpur Piloting Jute Mattress:		137.9	0	0	0.0	0	0.0	All Geotech Data Recd
Component Totals			3,609.2			2,294.3		2,532.2	
Works Totals			3,609.2			2,294.3		2,532.2	
ProjectTotals			6,084.8			4,543.5		4,880.2	

Table B-4 Project Program, by Contract

Code	Description	Cost (BDT Mil)
Goods		
Component B1: Materials Geotextile, Civil Works		
G-01	Geobags 1.25x1.00m; Chouhali, Sirajganj	322.60
G-02	Geobags 1.25x1.00m; Zaforganj & Harirampur, Manikganj	417.78
G-03	Geobags 1.25x1.00m; Harirampur, Manikganj	314.00
		1,054.38
Component B2: Materials Geotextile, Emerg		
G-04	Supply of Geobags; Chauhali & Harirampur	258.52
Component C1: Vehicles & Equipment Vehicles/Transport		
G-05	2016 Supply of Jeep;	5.49
G-06.1	2015 Supply of Jeeps;	21.18
G-06.2	2016 Supply of Jeep;	6.93
G-06.3	2016 Supply of Motorcycles;	1.31
		34.91
Component C2: Vehicles & Equipment Office Equipment		
G-07.1	Supply of Office Equip.; BWDB PMO	2.20
G-07.2	2016 Office Equipment; BWDB PMO	2.18
		4.37
Component C3: Vehicles & Equipment Survey Equipment		
G-8	Supply of Survey Equipments;	6.75
Component C4: Vehicles & Equipment DDM Office Eqpt		
G-9	Supply of Computers & Photocopiers; DDM	0.50
Goods Total		1,359.43
Services		
Component D1: Consulting Services ISPM; Consultant Serv.		
S-1	Implementation Consultant Services; Feasibility Study Tranche-2; River Stabilization & Land Recovery;	1,018.19
Component D2: Consulting Services INGO BWDB		
S-2	Resettlement Plan; Sirajganj, Tangail, Manikganj	16.20
S-02A	External Monitor for Resettlement;	1.30
		17.50
Component D3: Consulting Services INGO DDM		
S-04	Cb Flood Risk Mngmt; DDM	50.59
Component D4: Consulting Services Survey & Investigation		
S-06.1	2015 Erosion & Morphological Chg; Jamuna, Ganges, Padma R	4.60
S-06.2	2016 & 2017 Erosion Prediction;	25.26
		29.86
Services Total		1,116.13
Works		
Component A1: Civil Works Embankment Works		
W-1	Embankment (5 km); Kaijuri - Bhatpara; km 0-5 Kaijuri Reg 2V 1.5x1.8m; Koijuri Rohindakandi Reg 2V 1.5x1.8m; Ruhindakandi	322.98
W-2	Embankment (3.5 km); Bhatpata - Gala; km 5-8.5	118.24
W-3	Embankment (4 km); Gala - Verakhola; km 8.5-12.5	112.28
W-4	Embankment Reconst. (4.8 km); Baghabari - Verakhola; km 12.5-17.3 Verakhola Reg 2V 1.5x1.8m; Verakhola	362.36
W-5	Embankment Reconst. (5.7 km); Baghabari - Verakhola; km 17.3-23 Andhar Manik Reg 4V 1.5x1.8m; Andharmanik	287.08
W-15	Construction of Inspection Bungalow;	7.80
		1,210.74
Component A2: Civil Works Riverbank Prot Works		
W-06	Revetment (2 km); Chauhali; km 0- 2.5	422.13
W-07	Revetment (4.5 km); Chauhali; km 2.5-7.0	407.22
W-08	Revetment (2 km); Zaffarganj; km 6.1-8.1	466.87
W-09	Revetment (3.6 km); Harirampur; km 0-3.5	308.97
W-10	Revetment (5.2 km); Harirampur; km 3.5-7	258.37

Table B-4 Project Program, by Contract

Code	Description	Cost (BDT Mil)
Works		
Component A2: Civil Works Riverbank Prot Works		
		1,863.57
Component A3: Civil Works Emerg & Adaptation		
W-11	Emergency/Adaptive 1; Riverbank Protection	67.01
Component A4: Civil Works Pilot Land Recovery		
W-14	River Training Pilot Work; & Land Recovery	330.00
W-16	Shahzadpur Piloting Jute Mattress;	137.90
		467.90
Works Total		3,609.22
eXtra		
Component E1: Capacity Development BWDB Training & Study		
X-05	BWDB Training and Study Tours;	76.89
Component F1: Land Acqn & Resettle Land Compensation		
X-7	Land Compensation;	2,083.11
Component F2: Land Acqn & Resettle Resettle Benefits		
X-8	Resettlement Benefits;	90.00
Component G1: Program Management Staff Salaries BWDB		
X-2	BWDB Staff Salaries;	83.67
Component G2: Program Management Office Opns BWDB		
X-3	BWDB Office Operations;	32.29
Component G3: Program Management Office Opns DDM		
X-4	DDM Office Operations;	2.10
Component G4: Program Management BWDB River Surveys		
X-10.1	River Survey Work; Padma LB & Jamuna LB	0.15
X-10.2	Survey Work for Land Acquisition; Hat-Pachi to Dombaria	0.20
X-10.3	Land/River Survey Work; Jamuna at Chouhali 7km	0.15
X-10.4	Bathymetric River Survey; Dhaka, Pabna and Mymensingh	1.99
X-10.5	2018 Bathymetric River Survey; Manikganj	5.51
		8.00
Component X1: Misc. Costs Misc. Costs		
X-01	ADB Interest & Service Charge;	199.20
X-09	CD and SD;	12.10
X-11	Honarium allowance	0.80
		212.10
eXtra Total		2,588.16
Project Total		8672.9

Table B-5 BWDB PMO Expenditure Summary, by Contract

all Values in BDT

Code	Description	ADB	GON	GOB	Total
Goods					
B1 Geotextile, Civil Works					
G-01	Supply of Geobags; Chouhali, Sirajganj	325,119,259	0	0	325,119,259
G-02	Supply of Geobags; Zaforganj, Harirampur, Manikganj	417,777,105	0	0	417,777,105
G-03	Supply of Geobags; Harirampur, Manikganj	313,997,430	0	0	313,997,430
Component Total		1,056,893,794	0	0	1,056,893,794
B2 Geotextile, Emerg					
G-04	Supply of Geobags; Chauhali-Harirampur-Koijuri-Benotia	221,947,067	0	0	221,947,067
Component Total		221,947,067	0	0	221,947,067
C1 Vehicles/Transport					
G-05	2016 Supply of Jeep;	1,940,400	0	4,989,600	6,930,000
G-06.1	2015 Supply of Jeeps;	5,940,900	0	15,276,600	21,217,500
G-06.2	2016 Supply of Jeep;	1,537,200	0	3,952,800	5,490,000
G-06.3	2016 Supply of Motorcycles;	366,940	0	943,560	1,310,500
Component Total		9,785,440	0	25,162,560	34,948,000
C2 Office Equipment					
G-07.1	2015 Office Equipment; BWDB PMO	2,087,749	0	109,882	2,197,630
G-07.2	2016 Office Equipment; BWDB PMO	2,066,333	0	108,754	2,175,087
Component Total		4,154,081	0	218,636	4,372,717
C3 Survey Equipment					
G-08	2016 Supply of Survey Equipments;	6,409,650	0	337,350	6,747,000
Component Total		6,409,650	0	337,350	6,747,000
C4 DDM Office Eqpt					
G-09	2017 Supply of Office Equip; DDM; DDM	473,955	0	24,945	498,900
Component Total		473,955	0	24,945	498,900
Goods Total		1,299,663,987	0	25,743,491	1,325,407,478
Services					
D1 ISPM; Consultant Serv.					
S-01	ISPMC; Tranche 1;	86,710,580	493,583,300	86,710,580	667,004,459
Component Total		86,710,580	493,583,300	86,710,580	667,004,459
D2 INGO BWDB					
S-02	Resettlement Implementation Support; Sirajganj, Tangail, Manikganj	8,993,441	0	1,343,847	10,337,288
Component Total		8,993,441	0	1,343,847	10,337,288
D4 Survey & Investigation					
S-06.1	2015 Erosion & Morphological Chg;	4,002,000	0	598,000	4,600,000
S-06.2	2016 & 2017 Erosion Prediction;	16,881,479	0	2,522,520	19,403,999
Component Total		20,883,479	0	3,120,520	24,003,999
Services Total		116,587,499	493,583,300	91,174,947	701,345,746
Works					
A1 Embankment Works					
W-01	Embankment, & 2 Reg.; km 0-5	47,396,263	0	4,687,542	52,083,805
W-02	Embankment; km 5-8.5	46,696,089	0	4,618,294	51,314,383
W-03	Embankment; 8.5-12.5	37,297,225	0	3,688,736	40,985,961
W-04	Embankment & 1 Regulator; km 12.5-17.3	63,962,710	0	6,325,982	70,288,692
W-05	Embankment & 1 Regulator; km 17.3-21.3	26,124,286	0	2,583,721	28,708,007
W-15	Construction of Inspection Bungalow; Manikgonj	641,113	0	63,407	704,520
Component Total		222,117,685	0	21,967,683	244,085,368

Table B-5 BWDB PMO Expenditure Summary, by Contract

all Values in BDT

Code	Description	ADB	GON	GOB	Total
A2 Riverbank Prot Works					
W-06	Revetment; Jamuna at Chauhali, R1; km 0-2.5	384,141,613	0	37,992,028	422,133,641
W-07	Revetment; Jamuna at Chauhali, R2; km 2.5-7.0	370,574,469	0	36,650,222	407,224,691
W-08	Revetment; Jamuna at Zaffarganj, km 6.1-8.1	424,850,997	0	42,018,230	466,869,227
W-09	Revetment; Padma at Harirampur, R1; km 6.7-10.2	281,164,655	0	27,807,493	308,972,148
W-10	Revetment; Padma at Harirampur, R2; km 3.2-6.7	235,090,298	0	23,250,689	258,340,987
Component Total		1,695,822,032	0	167,718,662	1,863,540,694
A3 Emerg & Adaptation					
W-11	Emergency/Adaptive 1; Riverbank Protection	48,270,828	0	4,774,038	53,044,866
Component Total		48,270,828	0	4,774,038	53,044,866
A4 Pilot Land Recovery					
W-14	River Training Pilot Work; Manikganj, Tangail, Sirajganj	0	29,290,954	2,896,907	32,187,861
Component Total		0	29,290,954	2,896,907	32,187,861
Works Total		1,966,210,544	29,290,954	197,357,291	2,192,858,789
eXtra					
E1 BWDB Training & Study					
X-05	BWDB Training and Study Tours;	63,072,300	0	4,025,892	67,098,192
Component Total		63,072,300	0	4,025,892	67,098,192
F1 Land Compensation					
X-07	Land Compensation; Tangail and Manikganj	0	0	1,443,163,761	1,443,163,761
Component Total		0	0	1,443,163,761	1,443,163,761
F2 Resettle Benefits					
X-08	Resettlement Benefits;	66,897,392	0	0	66,897,392
Component Total		66,897,392	0	0	66,897,392
G2 Office Opns BWDB					
X-03	BWDB Office Operations;	16,914,871	0	2,306,573	19,221,444
Component Total		16,914,871	0	2,306,573	19,221,444
G3 Office Opns DDM					
X-04	DDM Office Operations;	1,040,650	0	141,907	1,182,557
Component Total		1,040,650	0	141,907	1,182,557
G4 BWDB River Surveys					
X-10.1	River Survey Work; left bank Padma & Jamuna	122,778	0	16,742	139,520
X-10.2	Survey Work for Land Acquisition; Hat-Pachi to Dombaria	170,702	0	23,278	193,980
X-10.3	Land/River Survey Work; Jamuna at Chouhali 7km	128,040	0	17,460	145,500
X-10.4	2017 Bathymetric River Survey; Dhaka, Pabna and Mymensingh	1,753,294	0	239,086	1,992,380
X-10.5	2018 Bathymetric River Survey; Manikganj	1,731,756	0	236,149	1,967,905
Component Total		3,906,571	0	532,714	4,439,285
X1 Misc. Costs					
X-01	ADB Interest & Service Charge;	120,000,000	0	0	120,000,000
Component Total		120,000,000	0	0	120,000,000
eXtra Total		271,831,784	0	1,450,170,847	1,722,002,631
Project Total		3,654,293,815	522,874,253	1,764,446,576	5,941,614,644

The donor values are calculated using Total Expenditure and percent distribution by Financial Component.

Table B-6 Reimbursement Summary, by Contract

Code	Description	Total Bill Amount		Reimbursed Amount (BDT)		
		(BDT)	ADB	GON	Total	
Goods						
B1 Geotextile, Civil Works						
G-01	Supply of Geobags; Chouhali, Sirajganj	322,485,940	322,485,940	0	322,485,940	
G-02	Supply of Geobags; Zaforganj, Harirampur, Manikganj	417,808,694	417,808,694	0	417,808,694	
G-03	Supply of Geobags; Harirampur, Manikganj	274,809,368	274,809,368	0	274,809,368	
		1,015,104,002	1,015,104,002	0	1,015,104,002	
B2 Geotextile, Emerg						
G-04	Supply of Geobags; Chauhali-Harirampur-Koijuri-Benotia	192,788,867	192,788,867	0	192,788,867	
C1 Vehicles/Transport						
G-05	2016 Supply of Jeep;	5,490,000	1,537,200	0	1,537,200	
C2 Office Equipment						
G-07.1	2015 Office Equipment; BWDB PMO	2,197,630	2,087,749	0	2,087,749	
G-07.2	2016 Office Equipment; BWDB PMO	2,175,087	2,066,333	0	2,066,333	
		4,372,717	4,154,081	0	4,154,081	
C3 Survey Equipment						
G-08	2016 Supply of Survey Equipments;	6,747,000	6,409,650	0	6,409,650	
C4 DDM Office Eqpt						
G-09	2017 Supply of Office Equip; DDM; DDM	498,900	473,955	0	473,955	
Goods Total		1,225,001,486	1,220,467,755	0	1,220,467,755	
Services						
D1 ISPM; Consultant Serv.						
S-01	ISPMC; Tranche 1;	657,682,617	82,357,227	468,802,675	551,159,902	
D2 INGO BWDB						
S-02	Resettlement Implementation Support; Sirajganj, Tangail, Manikganj	6,748,813	5,871,467	0	5,871,467	
D4 Survey & Investigation						
S-06.1	2015 Erosion & Morphological Chg;	4,600,000	4,002,000	0	4,002,000	
S-06.2	2016 & 2017 Erosion Prediction;	19,590,567	16,969,843	0	16,969,843	
		24,190,567	20,971,843	0	20,971,843	
Services Total		688,621,997	109,200,537	468,802,675	578,003,212	
Works						
A1 Embankment Works						
W-01	Embankment, & 2 Reg.; km 0-5	52,083,805	47,396,262	0	47,396,262	
W-02	Embankment; km 5-8.5	11,823,522	10,759,405	0	10,759,405	
W-03	Embankment; 8.5-12.5	11,228,173	10,217,637	0	10,217,637	
W-04	Embankment & 1 Regulator; km 12.5-17.3	48,385,548	44,030,849	0	44,030,849	
W-05	Embankment & 1 Regulator; km 17.3-21.3	28,708,007	26,124,287	0	26,124,287	
W-15	Construction of Inspection Bungalow; Manikgonj	704,520	641,113	0	641,113	
		152,933,575	139,169,553	0	139,169,553	
A2 Riverbank Prot Works						
W-06	Revetment; Jamuna at Chauhali, R1; km 0-2.5	429,044,461	386,564,472	0	386,564,472	
W-07	Revetment; Jamuna at Chauhali, R2; km 2.5-7.0	418,587,720	370,452,776	0	370,452,776	
W-08	Revetment; Jamuna at Zaffarganj, km 6.1-8.1	500,607,878	455,553,169	0	455,553,169	
W-09	Revetment; Padma at Harirampur, R1; km 6.7-10.2	316,513,638	288,027,411	0	288,027,411	
W-10	Revetment; Padma at Harirampur, R2; km 3.2-6.7	259,503,347	223,051,891	0	223,051,891	
		1,924,257,044	1,723,649,719	0	1,723,649,719	
A3 Emerg & Adaptation						
W-11	Emergency/Adaptive 1; Riverbank Protection	51,541,563	46,902,822	0	46,902,822	

Table B-6 Reimbursement Summary, by Contract

Code	Description	Total Bill Amount		Reimbursed Amount (BDT)		
		(BDT)	ADB	GON	Total	
Works Total		2,128,732,182	1,909,722,094	0	1,909,722,094	
eXtra						
E1 BWDB Training & Study						
X-05	BWDB Training and Study Tours;	57,684,125	54,223,077	0	54,223,077	
F2 Resettle Benefits						
X-08	Resettlement Benefits;	27,679,429	27,679,429	0	27,679,429	
G2 Office Opns BWDB						
X-03	BWDB Office Operations;	23,377,574	20,572,265	0	20,572,265	
G3 Office Opns DDM						
X-04	DDM Office Operations;	450,000	396,000	0	396,000	
G4 BWDB River Surveys						
X-10.1	River Survey Work; left bank Padma & Jamuna	141,500	124,520	0	124,520	
X-10.2	Survey Work for Land Acquisition; Hat-Pachi to Dombaria	200,000	176,000	0	176,000	
X-10.3	Land/River Survey Work; Jamuna at Chouhali 7km	149,860	131,877	0	131,877	
		491,360	432,397	0	432,397	
eXtra Total		109,682,488	103,303,169	0	103,303,169	
Project Total		4,152,038,152	3,342,693,555	468,802,675	3,811,496,230	

Table B-7 Reimbursement Summary, by Application

Acct.	Applic.	Exchange Rate			Total Bill Amount	Reimburs	ADB Reimbursed Amount	Grant Applic.	Reimburs	GoN Reimbursed Amount	Total Reimbursed Amount					
Type	No.	Date	Page	Cat	(BDT to US\$)	(BDT)	(US\$)	(%)	(BDT)	(US\$)	No.	(%)	(BDT)	(US\$)	(BDT)	(US\$)
L/C	BW001	2016-06-30	01	2	77.80	675,913,796	8,687,838	100	675,913,796	8,687,838			0	0	675,913,796	8,687,838
Dir.Pay.	BW002	2015-09-22	01	2	77.80	27,665,835	355,602	100	27,665,835	355,602			0	0	27,665,835	355,602
Dir.Pay.	BW003	2015-09-22	01	2	77.80	35,827,904	460,513	100	35,827,904	460,513			0	0	35,827,904	460,513
Imprest	BW006	2015-09-14	01	7A	77.80	596,191	7,663	88	524,648	6,744			0	0	524,648	6,744
			02	6B	77.80	4,600,000	59,126	87	4,002,000	51,440			0	0	4,002,000	51,440
			03	3B	77.80	2,197,630	28,247	95	2,087,749	26,835			0	0	2,087,749	26,835
			04	7A	77.80	457,804	5,884	88	402,868	5,178			0	0	402,868	5,178
			05	7A	77.80	200,000	2,570	88	176,000	2,262			0	0	176,000	2,262
			06	7A	77.80	149,860	1,926	88	131,877	1,695			0	0	131,877	1,695
									8,201,485	105,416		7,325,141	94,153			0
Imprest	BW008	2015-12-03	01	1	78.74	77,441,455	983,509	91	70,471,724	894,993			0	0	70,471,724	894,993
			02	2	78.74	23,896,480	303,486	100	23,896,480	303,486			0	0	23,896,480	303,486
									101,337,935	1,286,995		94,368,204	1,198,479			0
Dir.Pay.	BW009	2016-02-23	01	6A	77.57	18,202,930	234,649	13	2,366,381	30,504	BW010	74	13,470,168	173,641	15,836,549	204,145
Imprest	BW011	2016-03-07	01	1	78.74	154,166,642	1,957,920	91	125,963,608	1,599,741			0	0	125,963,608	1,599,741
			02	2	78.74	887,099	11,266	100	887,099	11,266			0	0	887,099	11,266
			03	6A	78.40	4,597,309	58,639	13	597,650	7,623	ED002	74	3,402,009	43,393	3,999,659	51,016
			04	7A	78.74	800,964	10,172	88	704,848	8,952			0	0	704,848	8,952
						160,452,013	2,037,997		128,153,205	1,627,582			3,402,009	43,393	131,555,214	1,670,975
Dir.Pay.	BW012	2016-03-20	01	6A	77.57	30,049,770	387,364	13	3,512,027	45,273	ED003	74	19,991,540	257,706	23,503,567	302,979
Imprest	BW013	2016-05-05	01	1	78.60	242,232,508	3,083,883	91	207,335,427	2,639,716			0	0	207,335,427	2,639,716
			02	2	78.40	97,265,910	1,240,637	100	97,265,910	1,240,637			0	0	97,265,910	1,240,637
			03	5	78.60	624,855	7,950	94	587,364	7,473			0	0	587,364	7,473
			04	7A	78.74	173,409	2,202	88	152,600	1,938			0	0	152,600	1,938
						340,296,682	4,334,672		305,341,300	3,889,763			0	0	305,341,300	3,889,763
Dir.Pay.	BW014	2016-06-23	01	5	78.40	7,966,561	101,614	94	7,488,568	95,517			0	0	7,488,568	95,517
Dir.Pay.	BW015	2016-06-29	01	6A	77.57	37,052,991	477,641	13	4,336,393	55,899	ED004	74	24,684,081	318,196	29,020,474	374,096

Table B-7 Reimbursement Summary, by Application

Acct.	Applic.	Exchange Rate	Total Bill Amount		Reimburs	ADB Reimbursed Amount		Grant Applic.	Reimburs	GoN Reimbursed Amount		Total Reimbursed Amount				
Type	No.	Date	Page	Cat	(BDT to US\$)	(BDT)	(US\$)	(%)	(BDT)	(US\$)	No.	(%)	(BDT)	(US\$)	(BDT)	(US\$)
Dir.Pay.	BW016	2016-06-29	01	6A	77.57	30,310,811	390,729	13	3,552,983	45,801	ED005	74	20,224,672	260,711	23,777,655	306,512
Imprest	BW017	2016-09-29	01	1	78.40	208,446,710	2,658,759	91	189,686,506	2,419,471		0	0	0	189,686,506	2,419,471
			02	2	78.40	56,809,500	724,611	100	56,809,500	724,611		0	0	0	56,809,500	724,611
			03	3A	78.40	5,490,000	70,026	28	1,537,200	19,607		0	0	0	1,537,200	19,607
			04	3B	78.40	8,922,087	113,802	95	8,475,983	108,112		0	0	0	8,475,983	108,112
			05	5	78.40	6,096,985	77,768	94	5,731,166	73,102		0	0	0	5,731,166	73,102
			06	6A	78.40	36,141,795	460,992	13	4,698,433	59,929	ED006	74	26,744,928	341,134	31,443,362	401,063
			08	6B	78.40	8,620,000	109,949	87	7,499,400	95,656		0	0	0	7,499,400	95,656
			09	7A	78.40	1,584,307	20,208	88	1,394,190	17,783		0	0	0	1,394,190	17,783
			10	7A	78.40	1,585,375	20,222	88	1,395,130	17,795		0	0	0	1,395,130	17,795
			11	7A	78.40	1,595,731	20,354	88	1,404,243	17,911		0	0	0	1,404,243	17,911
			12	7A	78.40	304,456	3,883	88	267,922	3,417		0	0	0	267,922	3,417
			13	7A	78.40	884,047	11,276	88	777,961	9,923		0	0	0	777,961	9,923
						336,480,994	4,291,849		279,677,635	3,567,317			26,744,928	341,134	306,422,563	3,908,451
Imprest	BW018	2016-12-08	01	6A	78.40	5,385,000	68,686	13	804,655	10,263	ED007	74	4,580,345	58,423	5,385,000	68,686
Dir.Pay.	BW019	2017-01-09	01	5	78.95	1,599,534	20,260	94	1,503,562	19,044		0	0	0	1,503,562	19,044
Imprest	BW020	2017-05-02	01	1	78.84	214,208,421	2,717,002	91	194,929,663	2,472,472		0	0	0	194,929,663	2,472,472
			02	1	78.84	248,912,255	3,157,182	91	226,510,152	2,873,036		0	0	0	226,510,152	2,873,036
			03	2	78.84	89,668,562	1,137,349	100	89,668,562	1,137,349		0	0	0	89,668,562	1,137,349
			04	6A	78.84	33,754,290	428,139	13	4,388,058	55,658	ED008	74	24,978,174	316,823	29,366,232	372,481
			05	6A	78.84	3,033,444	38,476	13	453,273	5,749		74	2,580,170	32,727	3,033,444	38,476
			06	7A	78.84	1,542,815	19,569	88	1,357,677	17,221		0	0	0	1,357,677	17,221
						591,119,787	7,497,717		517,307,385	6,561,484			27,558,345	349,550	544,865,730	6,911,034
Dir.Pay.	BW021	2017-02-26	01	6A	77.57	43,623,862	562,381	13	4,754,404	61,292	ED009	74	27,063,531	348,892	31,817,935	410,184
Dir.Pay.	BW022	2017-04-06	01	6A	77.58	10,914,447	140,695	13	1,248,698	16,097	ED010	74	7,107,971	91,627	8,356,669	107,724
			02	6A	77.58	31,422,484	405,059	13	3,594,977	46,342		74	20,463,714	263,793	24,058,691	310,135
			03	6A	77.58	27,536,950	354,972	13	3,150,441	40,612		74	17,933,279	231,173	21,083,720	271,785

Table B-7 Reimbursement Summary by Application

89,873,881	900,727	7,994,115	103,050	Grant	45,504,965	586,593	53,499,080	689,643
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Table B-7 Reimbursement Summary, by Application

Acct.	Applic.	Exchange Rate			Total Bill Amount	Reimburs	ADB Reimbursed Amount		Grant			GoN Reimbursed Amount	Total Reimbursed Amount					
Type	No.	Date	Page	Cat	(BDT to US\$)	(BDT)	(US\$)	(%)	(BDT)	(US\$)	No.	(%)	(BDT)	(US\$)	(BDT)	(US\$)		
Imprest	BW023	2017-06-22	01	1	78.84	125,870,850	1,596,535	91	114,542,474	1,452,847			0	0	0	114,542,474	1,452,847	
				02	2	78.84	15,301,650	194,085	100	15,301,650	194,085			0	0	0	15,301,650	194,085
				03	4	78.84	1,209,410	15,340	100	1,209,410	15,340			0	0	0	1,209,410	15,340
				04	5	78.84	1,518,029	19,255	94	1,426,947	18,099			0	0	0	1,426,947	18,099
				05	6A	78.84	16,135,219	204,658	13	2,216,757	28,117	ED011	74	12,618,463	160,052	14,835,220	188,169	
				06	6B	78.84	3,128,813	39,686	87	2,722,067	34,526			0	0	0	2,722,067	34,526
				07	7A	78.84	303,043	3,844	88	266,678	3,383			0	0	0	266,678	3,383
					163,467,014	2,073,402		137,685,983	1,746,398			12,618,463	160,052	150,304,446	1,906,449			
Dir.Pay.	BW024	2017-06-06	01	5	80.63	7,976,591	98,928	94	7,497,996	92,993			0	0	0	7,497,996	92,993	
Dir.Pay.	BW025	2017-06-07	01	6A	77.58	29,445,241	379,571	13	3,368,766	43,426	ED012	74	19,176,051	247,194	22,544,817	290,620		
Dir.Pay.	BW026	2017-03-31	01	6A	77.58	20,192,316	260,294	13	2,310,158	29,780	ED013	74	13,150,130	169,515	15,460,287	199,295		
Dir.Pay.	BW027	2017-07-06	01	6A	77.58	7,582,956	97,750	13	867,549	11,183	ED014	74	4,938,357	63,659	5,805,906	74,842		
Dir.Pay.	BW028	2017-07-06	01	5	80.00	8,000,000	100,000	94	7,520,000	94,000			0	0	0	7,520,000	94,000	
Imprest	BW029	2017-11-06	01	1	80.50	407,515,881	5,062,053	91	368,076,256	4,572,169			0	0	0	368,076,256	4,572,169	
				02	2	80.50	58,568,916	727,089	100	58,568,916	727,089			0	0	0	58,568,916	727,089
				03	3C	80.50	498,900	6,198	95	473,955	5,888			0	0	0	473,955	5,888
				04	4	80.50	826,850	10,271	100	826,850	10,271			0	0	0	826,850	10,271
				05	6A	80.50	32,250,000	400,422	13	4,192,500	52,055	ED015	74	23,865,000	296,312	28,057,500	348,367	
				06	6A	80.56	13,262,024	164,623	13	1,981,711	24,599			74	11,280,509	140,026	13,262,220	164,625
				07	6B	80.50	6,590,567	81,859	87	5,659,843	70,300			0	0	0	5,659,843	70,300
				08	7A	80.50	2,954,756	36,705	88	2,600,185	32,300			0	0	0	2,600,185	32,300
				09	7A	80.50	1,737,733	21,587	88	1,529,205	18,996			0	0	0	1,529,205	18,996
				10	7A	80.50	2,595,803	32,246	88	2,284,307	28,376			0	0	0	2,284,307	28,376
				11	7B	80.50	450,000	5,590	88	396,000	4,919			0	0	0	396,000	4,919
					527,251,430	6,548,643		446,589,728	5,546,963			35,145,509	436,339	481,735,237	5,983,301			
Imprest	BW030	2017-12-22	01	1	80.85	94,942,081	1,174,299	91	89,160,489	1,102,789			0	0	0	89,160,489	1,102,789	
				02	2	80.85	23,578,085	291,628	100	23,578,085	291,628			0	0	0	23,578,085	291,628

Table B-7 Reimbursement Summary, by Application

Acct.	Applic.	Exchange Rate			Total Bill Amount	Reimburs	ADB Reimbursed Amount		Grant			GoN Reimbursed Amount	Total Reimbursed Amount			
Type	No.	Date	Page	Cat	(BDT to US\$)	(BDT)	(US\$)	(%)	(BDT)	(US\$)	No.	(%)	(BDT)	(US\$)	(BDT)	(US\$)
Imprest	BW030	2017-12-22	03	5	80.56	6,170,300	76,593	94	5,800,082	71,997		0	0	0	5,800,082	71,997
			04	6A	80.56	23,848,512	296,034	13	3,100,307	38,484	ED016	74	17,647,899	219,065	20,748,205	257,550
			05	6B	80.56	2,000,000	24,826	87	1,740,000	21,599		0	0	0	1,740,000	21,599
			06	7A	80.56	774,099	9,609	88	681,207	8,456		0	0	0	681,207	8,456
					151,313,077	1,872,989			124,060,170	1,534,953			17,647,899	219,065	141,708,069	1,754,018
Dir.Pay.	BW031	2017-12-18	01	6A	77.58	8,714,858	112,341	13	997,048	12,853	ED017	74	5,675,505	73,162	6,672,553	86,014
			02	6A	77.58	2,456,507	31,666	13	281,043	3,623		74	1,599,785	20,622	1,880,829	24,245
					11,171,365	144,007			1,278,092	16,476			7,275,290	93,784	8,553,382	110,260
Dir.Pay.	BW032	2018-02-01	01	5	80.00	4,503,040	56,288	94	4,232,858	52,911		0	0	0	4,232,858	52,911
Dir.Pay.	BW033	2018-03-12	01	6A	77.58	19,036,391	245,393	13	2,177,912	28,075	ED018	74	12,397,345	159,811	14,575,257	187,886
			02	6A	77.58	30,137,989	388,501	13	3,448,021	44,448		74	19,627,197	253,009	23,075,218	297,457
					49,174,381	633,895			5,625,933	72,523			32,024,541	412,820	37,650,474	485,343
Imprest	BW034	2018-09-12	01	1	80.85	36,621,970	452,962	91	33,325,993	412,195		0	0	0	33,325,993	412,195
			02	1	80.85	84,779,843	1,048,607	91	77,149,657	954,232		0	0	0	77,149,657	954,232
			03	2	80.85	32,133,465	397,445	100	32,133,465	397,445		0	0	0	32,133,465	397,445
		2018-08-08	04	6A	80.85	10,571,718	130,757	13	1,374,323	16,998	ED019	74	7,823,071	96,760	9,197,395	113,759
					164,106,996	2,029,771			143,983,438	1,780,871			7,823,071	96,760	151,806,509	1,877,632
Dir.Pay.	BW035	2018-05-20	01	6A	77.58	41,470,746	534,589	13	4,744,577	61,161	ED020	74	27,007,592	348,148	31,752,169	409,309
Imprest	BW036	2018-07-23	01	5	80.57	3,222,921	40,002	94	3,029,546	37,601		0	0	0	3,029,546	37,601
Imprest	BW037	2018-12-05	01	1	80.85	86,245,779	1,066,738	91	78,483,659	970,732		0	0	0	78,483,659	970,732
			02	1	80.85	42,551,695	526,304	91	38,722,042	478,937		0	0	0	38,722,042	478,937
			03	1	80.85	5,342,759	66,082	91	4,861,911	60,135		0	0	0	4,861,911	60,135
			04	1	80.85	31,934,743	394,988	91	29,060,616	359,439		0	0	0	29,060,616	359,439
			05	1	80.85	34,351,775	424,883	91	31,260,116	386,643		0	0	0	31,260,116	386,643
			06	2	80.85	70,375,667	870,447	100	70,375,667	870,447		0	0	0	70,375,667	870,447
			07	4	80.85	25,643,169	317,170	100	25,643,169	317,170		0	0	0	25,643,169	317,170
			08	5	80.85	2,835,756	35,074	94	2,665,610	32,970		0	0	0	2,665,610	32,970

Table B-7 Reimbursement Summary, by Application

Acct.	Applic.	Exchange Rate	<u>Total Bill Amount</u>		Reimburs	<u>ADB Reimbursed Amount</u>		Grant	Reimburs	<u>GoN Reimbursed Amount</u>		<u>Total Reimbursed Amount</u>				
Type	No.	Date	Page	Cat	(BDT to US\$)	(BDT)	(US\$)	(%)	(BDT)	(US\$)	No.	(%)	(BDT)	(US\$)	(BDT)	(US\$)
Imprest	BW037	2018-12-05	09	6A	80.85	13,030,986	161,175	13	1,694,028	20,953	ED021	74	9,642,930	119,269	11,336,958	140,222
			10	6A	80.85		0	13	646,620	7,998		74	3,680,761	45,526	4,327,381	53,524
			11	6B	80.85	6,000,000	74,212	87	5,220,000	64,564		0	0	0	5,220,000	64,564
			12	7A	80.85	2,753,267	34,054	88	2,422,875	29,968		0	0	0	2,422,875	29,968
			13	7A	80.85	772,422	9,554	88	679,731	8,407		0	0	0	679,731	8,407
			14	7A	80.85	1,339,394	16,566	88	1,178,667	14,578		0	0	0	1,178,667	14,578
			15	7A	80.85	461,021	5,702	88	405,698	5,018		0	0	0	405,698	5,018
					323,638,433	4,002,949	293,320,410	3,627,958				13,323,691	164,795	306,644,101	3,792,753	
Dir.Pay.	BW038	2018-10-12	01	5	80.85	1,311,347	16,220	94	1,232,666	15,246		0	0	0	1,232,666	15,246
Dir.Pay.	BW039	2018-10-17	01	5	80.85	3,030,274	37,480	94	2,848,458	35,231		0	0	0	2,848,458	35,231
Dir.Pay.	BW040	2018-11-14	01	6A	80.85	33,020,201	408,413	13	4,934,047	61,027	ED024	74	28,086,112	347,385	33,020,159	408,413
Dir.Pay.	BW041	2018-11-21	01	6A	80.85	40,070,299	495,613	13	5,987,512	74,057	ED023	74	34,082,763	421,556	40,070,276	495,613
Imprest	BW042	2019-02-19	01	1	80.85	6,802,241	84,134	91	6,190,039	76,562		0	0	0	6,190,039	76,562
			02	1	80.85	8,703,850	107,654	91	7,920,504	97,965	0	0	0	7,920,504	97,965	
			03	1	78.95	17,660,724	225,385	91	16,071,259	205,100	0	0	0	16,071,259	205,100	
			04	5	80.85	2,827,932	34,978	94	2,658,256	32,879	0	0	0	2,658,256	32,879	
			05	6A	80.85	3,002,404	37,135	13	390,313	4,828	74	2,221,779	27,480	2,612,092	32,308	
			06	6A	80.85	1,428,165	17,664	13	185,661	2,296	74	1,056,842	13,072	1,242,504	15,368	
			07	7A	80.85	302,437	3,741	88	266,144	3,292	0	0	0	266,144	3,292	
					40,727,753	510,691	33,682,176	422,922				3,278,621	40,552	36,960,797	463,474	
Project Totals					4,152,038,152	52,544,145	3,342,693,555	42,267,054				468,802,675	5,959,863	3,811,496,230	48,226,917	

Table B-7 Reimbursement Summary, by Application

Grant

Table B8 : ADB & GON Disbursement Details ADB

Disbursements

ADB Loan Account

Appl. No	Date	US\$	Rate	BDT
WL001	09-Dec-2014	3,682,433.00	77.85	286,677,409
WI007	17-Dec-2015	11,069,711.00	78.70	871,186,256
BW006	15-Oct-2015		77.80	
BW008	20-Dec-2015	1,198,478.59	78.70	94,320,265
BW013	30-Jun-2016	3,889,762.94	78.40	304,957,414
BW011	02-Oct-2016	1,627,548.73	78.40	127,599,820
BW017	27-Nov-2016	3,567,316.77	78.65	280,569,464
BW018	04-May-2017	10,263.46	78.40	804,655
BW020	02-May-2017	6,561,484.21	78.84	517,307,415
BW023	22-Jun-2017	1,746,397.55	78.84	137,685,983
BW029	06-Nov-2017	4,715,885.93	80.51	379,675,976
BW030	22-Dec-2017	1,148,309.32		17,370,057
BW034	12-Sep-2018	1,708,882.48	80.85	138,163,149
BW037	05-Dec-2018	3,546,512.56	80.85	286,735,540
		44,472,986.54		3,482,999,524

Grant Imprest Account

Appl. No	Date	US\$	Rate	BDT
WG002	09-Dec-2014	1,189,354.00	77.85	92,591,209
WG007	17-Dec-2015	20,651.00	78.70	1,625,234
WG008	04-Oct-2016	319,995.00	78.40	25,087,608
ED002	24-Nov-2016	43,392.97	78.63	3,411,989
ED006	24-Nov-2016	341,134.29	78.63	26,823,389
ED007	04-May-2017	58,422.77	78.40	4,580,345
ED008	02-May-2017	349,549.87	78.84	27,558,512
ED011	22-Jun-2017	160,051.52	78.84	12,618,462
ED015	10-Nov-2017	435,718.95	80.66	35,145,091
ED016	22-Dec-2017	218,279.52	77.58	16,934,125
ED019	08-Aug-2018	163,006.75	80.85	13,179,095
ED021	10-Oct-2018	164,795.19	80.85	13,323,691
ED024	19-Dec-2018	656,219.52	80.85	53,055,348
		4,120,571.35		345,575,687

Reimbursement

Dir. Pay Applic	Date	Category	ADB & GoN	
			US\$	(BDT)
BW002	22-Sep-2015	2	355,602	27,665,835
BW003	22-Sep-2015	2	460,513	35,827,904
BW009/BW010	23-Feb-2016	6A	204,145	15,836,549
BW012/ED003	20-Mar-2016	6A	302,979	23,503,567
BW014	23-Jun-2016	5	95,517	7,488,568
BW015/ED004	29-Jun-2016	6A	374,096	29,020,474
BW016/ED005	29-Jun-2016	6A	306,512	23,777,655
BW001 (LC)	30-Jun-2016	2	8,687,840	675,998,236
BW019	20-Jan-2017	5	19,044	1,503,562
BW021/ED009	10-Mar-2017	6A	410,184	31,819,987
BW022/ED010	06-Apr-2017	6A	689,589	53,499,087
BW024	06-Jun-2017	5	92,993	7,497,996
BW025/ED012	07-Jun-2017	6A	290,620	22,544,814
BW026/ED013	22-Jun-2017	6A	199,295	15,460,289
BW027/ED014	06-Jul-2017	6A	74,843	5,805,907
BW028	06-Jul-2017	2	94,000	7,520,000
BW031/ED017	12-Jan-2018	6A	110,240	8,553,382
BW032	01-Feb-2018	5	52,910	4,232,857
BW033/ED018	12-Mar-2018	2	485,343	37,650,474
BW035/ED020	08-Jun-2018	6A	61,161	4,744,577
BW036	18-Jul-2018	5	37,601	3,029,546
BW038	12-Oct-2018	5	15,246	1,250,199
BW039	17-Oct-2018	5	35,281	2,888,974
BW040/ED022	14-Nov-2018	6A	408,413	31,682,607
BW041/ED023	21-Nov-2018		495,613	38,447,167
Totals			14,359,549	1,117,250,212

Total Disbursement

Currency	ADB & GON
BDT Mil	5,319
US\$ Mil	65.80

Appendix-C Administrative Details

Table C-1 Utilization of Consultant Person-Months

No.	Position	Firm	Name	Contract	VO - 2 R1	Balance VO-2	
MAIN TEAM - INTERNATIONAL							
I-1	Team Leader / River Management Specialist	NHC	Knut Oberhagemann	35.0	33.50	3.94	Knut Oberhagemann
I-2	Institutional Development Specialist/	EMM	Robert A. van de Putte	5.0	3.00	0.49	Robert A. van de Putte
I-3	Morphologist	DELTARES	Erik Mosselman	5.0	4.50	-0.22	Erik Mosselman
I-4	River Engineer	NHC	Bruce Walsh	10.0	4.50	0.32	Bruce Walsh
I-5	Construction / Quality Control Engineer	EMM	Basistha Adhikari	24.0	0.87	0.00	Basistha Adhikari
I-6	Flood Risk Management Specialist	NHC	Dave Burkholder	12.0	10.80	-0.25	Dave Burkholder
I-7	Social Development / Resettlement Specialist	EMM	Jean Louis Leterme	8.0	11.00	0.48	Jean Louis Leterme
I-8	Economist	NHC	John D. M. Roe	3.0	2.00	0.21	John D. M. Roe
	CRVA (Climate Risk and Vulnerability Assessment)					-0.45	
I-9	Financial Management Specialist	EMM	J. Spurr	1.5	0.00	0.00	J. Spurr
I-10	Hydrologist	NHC	Derek Stuart	3.0	5.50	-2.32	Derek Stuart
I-11	Environmental Specialist	EMM	Wandert Benthem	7.0	7.00	3.61	Wandert Benthem
I-12	Information and Data Management Specialist	NHC	Dave Burkholder	4.0	8.50	1.89	Dave Burkholder
I-13	Unallocated Engineering Services	NHC	TBN		44.0		TBN
I-13-1	Int'l Construction Advisor/Engineer	NHC	Graeme Vass	3.0	3.00	0.00	Graeme Vass
	Junior Engineer			4.0	12.00	-3.27	
I-13-2	CRVA (Climate Risk and Vulnerability Assessment)	NHC	Jesper Mathiesen			-0.36	Jesper Mathiesen
I-13-3	Numerical Modeller	NHC	Angela Thompson	5.0	10.00	0.30	Angela Thompson
I-13-4	Unallocated Engineering Services	NHC	Seth Bryant		4.00	0.57	Seth Bryant
I-13-5	Unallocated Engineering Services	NHC	TBN/Brecht D'Haeyer		2.00	-0.62	TBA
I-16	Geotechnical/Construction Engineer	EMM	Hiba Khan		13.0	6.00	Hiba Khan
I-14	Senior Geotechnical Engineer	NHC	Dr. Horst Kramer		2.00	0.36	Dr. Horst Kramer
I-15	River Engineer	NHC	Brad Hall		5.50	-0.92	Brad Hall
I-17	Water Resources Specialist	NHC	Marieke Niewaal		0.14	0.14	Marieke Niewaal
	Design and Specification Engineer				6.00	3.21	
			Totals	129.50	192.81	13.80	
Main Team National							
N-1	DTL / Flood & Erosion Risk Management Spec.	EMM	Sharif Al Kamal	41.5	39.50	2.73	Sharif Al Kamal
N-2	Institutional / Capacity Development Specialist	RPMC	Dr. M. A. Qassem	10.0	10.00	0.14	Dr. M. A. Qassem
N-3	River Engineer (Morphologist)	CEGIS	Dr. Maminul Haque Sarker	8.0	8.80	2.07	Dr. Maminul Haque Sarker
N-4	Community-based Flood Risk Mngt. Spec.	RPMC	Quazi Towfique Islam	36.0	37.0	2.19	Quazi Towfique Islam
N-5	Resettlement Specialist	EMM	Shireen Akhter/Begum S. Nahar	15.0	19.50	3.05	Shireen Akhter/Begum S. Nahar
N-6	Project Economist	RPMC	Amiul Islam	7.0	9.50	0.36	Amiul Islam
N-7	Procurement Specialist	RPMC	A. Abdullah Chowdhury / Md. Abdullah Sadeque	10.0	2.12	0.23	A. Abdullah Chowdhury / Md. Abdullah Sadeque
N-8	Construction Engineer	RPMC	Mirza Harunar Rashid	32.0	35.0	0.06	Mirza Harunar Rashid
N-9	Financial Management Specialist	EMM	Md. Habibur Rahman/Ektedar Rahman	12.0	9.00	0.03	Md. Habibur Rahman/Ektedar Rahman
N-10-1	River Engineer Flood Management Infr.- 1	RPMC	Mukhles uz zaman	12.5	14.50	0.76	Mukhles uz zaman
N-10-2	River Engineer Flood Management Infr.-2	RPMC	Md. Motiur Rahman	12.5	20.50	2.49	Md. Motiur Rahman
N-11	Social Development and Gender Specialist	EMM	Ruh Afza Ruhi/Begum S. Nahar	12.0	11.0	1.64	Ruh Afza Ruhi/Begum S. Nahar
N-12	Environment Specialist	EMM	Dr. Md. Nurul Islam/Md. Amir Faisal	16.0	19.0	2.86	Dr. Md. Nurul Islam/Md. Amir Faisal
N-13	Training Coordinator	EMM	Jahangir Kabir/Shameem Ahmed	14.0	20.0	0.71	Jahangir Kabir/Shameem Ahmed
N-14	Information and Capacity Management Specialist	EMM	Asrafuzzamen	15.0	0.00	0.00	Asrafuzzamen
N-15	Hydraulic Structural Engineer	RPMC	Md. Dabir Uddin/Aminul Haque Shah	10.0	3.00	-0.02	Md. Dabir Uddin/Aminul Haque Shah
N-16	Road Engineer	RPMC	Zakir Hossain	6.0	5.00	0.79	Zakir Hossain
N-17	Geotechnical Engineer / Geotechnical Expert (Local)	EMM	Md. Korban Ali / Md. Shamsul Islam	7.0	7.00	-1.08	Md. Korban Ali / Md. Shamsul Islam
N-18-1	Site Engineer 1 (PRB-1)	RPMC	Md. Nurul Amin	36.0	39.00	3.08	Md. Nurul Amin
N-18-2	Site Engineer 2 (ILB-2 Chauhali)	RPMC	KM Nazmul Haque/Ekram Sarder/Mainul Islam	36.0	14.00	4.28	KM Nazmul Haque/Ekram Sarder
N-18-3	Site Engineer 3 (ILB-2 Zaffarganj)	EMM	Md. Faridul Alam/Moin Uddin	36.0	37.00	5.09	Moin Uddin
N-18-4	Site Engineers 4 (PLB-1 Harirampur)	EMM	Abdul Jalil/Saiful Islam	36.0	14.00	5.96	Abdul Jalil/Saiful Islam
N-19	Surveyor	EMM	Osman Ghani		13.00	0.74	Osman Ghani
N-20	Unallocated Engineering Services	RPMC	TBN		6.00	5.0	Mukhles uz zaman
N-21	Morphologist	CEGIS	Sudipta Kumar Hore		4.00	0.03	Sudipta Kumar Hore
			Totals	420.50	397.42	43.19	

Flood and Riverbank Erosion Risk Management Investment Program (FRERMIP), Project-1

Table C-1 Utilization of Consultant Person-Months continue d ...

RIVER STUDY TEAM - INTERNATIONAL							
IR-1	Task Leader / Flood & River Management Spec.	NHC	CarstenStuab	10.0	10.98	0.00	CarstenStuab
IR-2	Institutional Development Specialist/Capacity Development Specialist.	EMM	Robert A. van de Putte	3.0	1.00	0.5	Robert A. van de Putte
IR-3	Morphologist	DELTARES	SanjayGiri	7.0	6.30	0.18	SanjayGiri
IR-4	River Engineer (River Training)	NHC	GerrittKlaassen	7.0	10.00	-0.33	GerrittKlaassen
IR-5	Water Resources Management Specialist	DELTARES	W. J. Oliemans	5.0	2.50	-0.25	W. J. Oliemans
IR-6	Economist	EMM	AlexanderMueller/John D.M. Roe	4.0	2.70	0.23	Alexander
	CRVA (Climate Risk and Vulnerability Assessment)					0.00	
IR-7	Social / Regional Development Specialist	NHC	MarkHopkins	5.0	6.20	0.05	MarkHopkins
IR-8	Environmental Specialist	EMM	WandertBentham	4.0	4.00	0.03	WandertBentham
IR-9	Hydrologist	NHC	Malcolm Leytham	5.0	3.50	0.59	Malcolm Leytham
	CRVA (Climate Risk and Vulnerability Assessment)					-0.73	
IR-10	Climate Change Specialist	NHC	Mariza Costa-Cabral		2.00	0.02	Mariza Costa Cabral
	CRVA (Climate Risk and Vulnerability Assessment)					-0.07	
IR-11	Dredging Specialist	NHC	Pieter Van Groen		2.00	-0.11	Pieter Van Groen
IR-12	urban & Master Planner	NHC	Dr. Douglas Webster		3.50	0.68	Dr. Douglas Webster
IR-13	Morphologist Modeller	DRS	Mohammed Yossef		1.50	0.13	Mohammed Yossef
IR-1	Sedimentologist	NHC	Dan Haught		2.0	0.58	Dan Haught
IR-2	Geomorphologist	NHC	Andrew Nelson		1.0	0.10	Andrew Nelson
IR-3	Community Development/ Flood Management Specialist	EMM	Judith de Bruijne		1.5	1.32	Judith de Bruijne
IR-4	Report Editor	NHC	Dr. Sara Bennett,		2.0	1.76	Dr. Sara Bennett,
IR-5	Report Publisher	NHC	Sabrina Asche		5.0	1.97	Sabrina Asche
			Totals	50.00	56.18	6.65	
			Grand Total International	179.5	62.7	20.45	
RIVER STUDY TEAM - NATIONAL							
NR-1	Water Resources Management Specialist	RPMC	G M Akram Hossain	10.0	9.57	-0.35	G M Akram Hossain
NR-2	Flood Management Specialist	RPMC	Md. Makbul Hossain	6.0	7.55	0.00	Md. Makbul Hossain
NR-3	River Engineer (Morphologist)	CEGIS	Dr. Maminul Haque Sarker	9.0	4.00	0.43	Dr. Maminul Haque Sarker
NR-4	Economist	EMM	Dr. Shaker Ahmed	4.0	0.50	0.50	Dr. Shaker Ahmed
NR-5	Regional / Spatial Planner	RPMC	Dr. Shamim M Haque	4.0	3.50	0.13	Dr. Shamim M Haque
NR-6	Institutional Development Specialist	RPMC	Dr. M. A. Qassem	4.0	4.00	0.06	Dr. M. A. Qassem
NR-7	River Engineer	RPMC	Md. Motiur Rahman Jewel	8.0	12.0	0.30	Md. Motiur Rahman Jewel
NR-8	Hydrologist	EMM	Imdadul Haque Siddiqui	6.0	0.00	0.00	Imdadul Haque Siddiqui
NR-9	Social Development and Gender Specialist	EMM	Ruh Afza Ruhi/Begum S. Nahar	5.0	5.00	1.01	Ruh Afza Ruhi/Begum S. Nahar
NR-10	Environment / Climate Change Specialist	EMM	Md. Rakibul Haque/Amir Faisal	5.0	2.50	0.01	Md. Rakibul Haque
NR-11	Water Supply and Water Quality Specialist	EMM	Md. Mozammel Hossain/Dr. Khairul Bashar	5.0	4.00	0.37	Md. Mozammel Hossain/Dr. Khairul Bashar
NR-12	Agriculture Specialist	RPMC	Dr Quazi Reasul Islam	4.0	4.00	0.66	Dr Quazi Reasul Islam
NR-13	Fishery Specialist	RPMC	Dr. Md. S. Howlader	5.0	10.00	5.00	Dr. Md. S. Howlader
NR-14	Environmental Advisor	EMM	Dr. Ainun Nishat		1.00	0.82	Dr. Ainun Nishat
			Totals	75.00	67.62	8.93	
			Grand Total National	495.5	67.6	52.12	
					714.030		

Appendix-D Status of River Study Technical Notes

New Number	Old Number	Title	Main Author(s)	Review/Approval	A	B	C	D	E	F	G	Status
					Background information	Morphology - General	Morphology - Bifurcations & Offtakes	River Engineering	Water Resources and Flood Modelling	Social and Environmental Impacts	Land Use & Economic Benefits	
A1	1	Background data, river use, studies and plans	MH	CS	x							Completed
A2	40	Inland Navigation and Dredging	HK	KO	x							Completed: 22-Dec-2018.
B1	2	Holistic river morphology analysis for the Brahmaputra river system	MHS	CS/EM		x						Formating completed.
B2	44	Long term view of Brahmaputra/Jamuna channel	AN	EM		x						Formating completed.
B3	39	Cross-Section Analysis on Brahmaputra, Jamuna and Padma Rivers	MRJ	GJK		x						Formating completed.
B4	5	Char characteristics and dynamics – past and present conditions on basis of satellite imagery	MHS	GJK		x						Formating completed.
B5	4	Upper Meghna - present conditions and issues	JAA/MHS	CS		x						Formating completed.
C1	6	River bifurcations: Theory and model experience	EM	KO			x					Reviewed by Author/Reviewer
C2	7	Anabranching Channels of the Jamuna and Padma Rivers	MHS	CS			x					Reviewed by Author/Reviewer
C3	8	River bifurcations: Simplified numerical modelling	AT	SG/GJK			x					Reviewed by Author/Reviewer
C4	9	Reach 3 and bifurcation: numerical modelling	AT/SG	EM			x					Reviewed by Author/Reviewer
C5	10	Offtake and Flow Dynamics of the Major Rivers	MHS	CS			x					Reviewed by Author/Reviewer
C6	11	Offtakes part 2 Numerical model studies and generic guidelines	MY	EM			x					Reviewed by Author/Reviewer
D1	13	River Stabilization Plan -Technical Basis	GJK	BH				x				Draft expected by mid-Feb-2019.
D2	14	River stabilization of other main rivers	GJK/BH/EM	BH/GJK				x				Completed; 04-Jan-2019.
D3	15	Earlier proposals and attempts for stabilization of Jamuna River (include capital dredging)	MZ/GJK	BH				x				Draft expected by mid-Feb-2019.
D4	17	Intermediate and final planform alternatives	MRJ	GJK				x				Review expected by mid-Feb-2019.
D5	18	Feasible techniques and methods for riverbank protection and future channel narrowing	AN	BH				x				Completed; 16-Sep-2018.
D6	16	Underwater Apron for Chandpur Confluence	MRJ/AT	SG				x				Completed
E1	19	Main river flood risk and management	Mho/DS	DS					x			Completed; 29-Oct-2018.
E2	20	Flooding numerical modelling	DS	BH					x			Final report completed.
E3	21	Distributaries: Water resources preparation and baseline	WO/ML	ML					x			Completed; 10-Jan-2018
E4	22	Potential Impacts of Flow Augmentation and Study Needs	WO/ML	EM					x			Completed; 17-Apr-2018
F1	23	Socio-economic Aspects	MH/SN	JLL						x		Completed; 07-Dec-2017.
F2	24	Environmental and social aspects of river stabilization: Remedial measures	WB/MH	CS						x		Completed
F3	25	Fisheries Impacts of FRERIMP and their Management: A Pre-project Status Review	SH	CS/WB						x		Completed
F4	27	Long-term effects of river narrowing on water levels	EM	KO						x		Completed; 22-Nov-2017.
F5	36	Effects of sinuosity on channels and bars	MY	EM						x		Completed
F6	26	River stabilization and Sediment Management	GJK	BH						x		Draft expected by end-Jan-2019.
F7	43	Char Stabilization Impact Modelling	SB/GJK	EM						x		Formating completed.
F8	37	Impact of Earthquake Induced Sediment Supply Variability	EM/AN	GJK/BH						x		Completed; 03-Aug-2018
F9	28	Future conditions affecting flows	MCC	ML						x		Completed; 13-Feb-2018
G1	29	Planning the Use of Stabilized and Reclaimed Land, Procedure and Issues	MH	CS							x	Completed
G2	30	Charland amelioration and agriculture development	QRI/AC	AC							x	Completed; 10-June-2018
G3	31	Economic Assessment of River Stabilization	JR/AI	KO							x	Final expected by end-Jan-2019. Requires data from CEGIS.

Abbreviations:

AC = Alan Clark	DS = Derek Stuart	KO = Knut Oberhagemann	MZ = Mukhles uz Zaman
AF = Amir Faisal	EM = Erik Mosselman	MCC = Mariza Costa-Cabral	QRI = Qazi Reasul Islam
AI = Aminul Islam	GJK = Gerrit Klaassen	MH = Mark Hopkins	SB = Seth Bryant
AN = Andrew Nelson	HK = Hiba Khan	MHo = Makbul Hossain	SG = Sanjay Giri
AT = Angela Thompson	JAA = Jakia Akter	MHS = Mamin H. Sarker	SH = Shajahan Howlader
BH = Brad Hall	JLL = Jean Louis Leterme	ML = Malcolm Leytham	SN = Shamsun Nahar
BW = Bruce Walsh	JM = Jesper Mathiesen	MRJ = Motiur Rahman Jewel	WB = Wandert Bernthem
CS = Carsten Staub	JR = John Roe	MY = Mohamed Yossef	WO = William Oliemans

Reports

0	Annex Submitted
6	Formatting Reviewed
6	Formatted
18	Technically Complete
2	Draft Complete
3	Under Preparation
35	Total

Appendix-E ISPMC Performance Compliance with ToR

Tasks by ToR	Tasks Done	Current Tasks	Future Tasks
<p>Task-1: Supporting BWDB for institutional capacity strengthening of the holistic and strategic management of the main rivers</p>	<p>1 Inception Report, 12 Quarterly Progress Reports, 1 Mid-term Review Report, have been submitted</p>	<p>The Quarterly Progress Report-13 for October-December quarter is being prepared</p>	<p>The Quarterly Progress Report-14 to 17 will be submitted as scheduled. The Tranche-1 completion report will be submitted at the end of the project in December 2019.</p>
<p>Task-2: Supporting BWDB and DDM for project implementation management of Tranche-1</p>	<p>1. Institutional capacity strengthening: From DPP Budget, 11 Trainings and tours done. From ISPMC Budget, 10 workshops, trainings, conference and round-table discussions were arranged.</p>	<p>1. Institutional capacity strengthening: From DPP Budget, 5 trainings are being implemented.</p>	<p>1. Institutional capacity strengthening: From DPP Budget, 4 more trainings will be implemented in fiscal year 19/20.</p>
	<p>2. Data and knowledge base development for flood and river management: basic river survey database, project maintenance database, resettlement and socio-economic survey database for Tranche-2 Feasibility studies have been built.</p>	<p>2. Data and knowledge base development for flood and river management: the river survey database is being populated and preparation being taken for hand-over to BWDB. The project monitoring database is currently being used by the ISPMC to generate quarterly progress reports and assisting PMO.</p>	<p>2. Data and knowledge base development for flood and river management: river survey database will be fully populated and handed over to the BWDB</p>
	<p>3. Support BWDB for supervising physical works: Supervising for Riverbank protection works at three sites since October 2015. The ISPMC submitted 6 construction</p>	<p>3. The supervising of embankment construction works is currently ongoing</p>	<p>3. ISPMC will finish supervising the embankment construction works and the river training pilot works and will submit construction completion report.</p>

Tasks by ToR	Tasks Done	Current Tasks	Future Tasks
	completion reports for 3 completed riverbank protection sites. 4. Support DDM for implementing Community-based Flood Risk Management: Implementation NGO has been contracted in August 2018 with the help of ISPMC expert	4. The ISPMC is supporting the NGO for implementing Community-based Flood Risk Management.	4. The ISPMC will support the NGO for implementing Community-based Flood Risk Management. The ISPMC specialist will submit the final report.
Task-3: Supporting BWDB for preparation of Tranche-2, including verification of site selections, feasibility studies, preparation of loan approval documents meeting requirements for the government and ADB	1. Site Selection Report submitted in May 2017 2. Technical and social field surveys completed in December 2017 3. Basic Structural design complete in March 2018 4. Design of non-structural activities completed in March 2018 5. Safeguard, gender and poverty assessment completed in March 2018 6. Project economic assessment completed in March 2018	Final Feasibility Report and Detailed design update is ongoing and ADB evaluation of safeguard documents ongoing.	Final Feasibility report and detailed design will be submitted based on comments followed by the Department of Environment approval of the Environmental Impact Assessment (EIA) and approval of the DPP through ECNEC.
Task-4: A long-term strategic river stabilization plan study for the Jamuna, Padma and Lower Meghna rivers covering from the Indian border to the estuary (by the river study task team)	Strategic framework on long-term river stabilization plan was presented in a workshop on December 2016. It was submitted on May 2017 and approved by the Technical Advisory Committee on September 2017.	4 main reports are being finalised.	4 main reports with some supplementary annexes will be submitted
Task-5: A preliminary master plan study for river management of the Jamuna-Padma-Lower Meghna-	Draft regional plan has been submitted in September 2018 (part of Task-4)		Final regional master plan will be submitted

Flood and Riverbank Erosion Risk Management Investment Program (FRERMIP), Project-1

Tasks by ToR	Tasks Done	Current Tasks	Future Tasks
Upper Meghna River system network (by the river study task team)			
Task-6: Development, implementation support, and monitoring of land recovery/river training piloting schemes, including piloting using building with nature concept (by the river study task team)	ISPMC has assisted PMO, BWDB on preparing technical specifications and bid documents for implementing grout-filled jute mattress as riverbank protection works as a part of river training piloting schemes for first contract.	ISPMC is currently assisting PMO, BWDB on the mobilizing of the contractor.	Second Pilot works contract will be prepared.
Task-7: Hydraulic and morphological analyses for the Jamuna-Meghna and Jamuna-Padma-Ganges confluences (by the river study task team)	Included in Task-4	Included in Task-4	Included in Task-4

Appendix-F Revised Gender Action Plan

Revised Gender Action Plan

GAP IMPLEMENTATION MONITORING

**Quarterly Progress Report on Revised⁶ Gender Action Plan (GAP)
Of**

Flood and Riverbank Erosion Management Investment Program (FRERMIP) Tranche-1

Project Title:	Flood and Riverbank Erosion Management Investment Program (FRERMIP) Tranche-1	
Date of Update:	31-12-2018	Submission Date: 07-10-2018
Agency:	Bangladesh Water Development Board	
Timeframe:	2015-2019	
Gender Category:	EGM	
Project Impact (from PAM):	The expected impact of the investment program will be improved livelihoods of people in the project area along the main rivers in Bangladesh.	
Project Outcome (from DPP log frame):	The outcome of the program will be reduced flood and riverbank erosion risks in the subproject reaches	
Whether there is a Gender Action Plan:	Yes	

⁶ During MTR Mission February 2018

Flood and Riverbank Erosion Risk Management Investment Program (FRERMIP), Project-1

Is there a Gender Specialist:	Yes; a Gender Specialist (intermittent basis) in Institutional Strengthening Project Management Consultants (ISPMC) Team and a Gender Focal Point in Project Management Office (PMO);
If not, how gender mainstreaming is supported?	N/A

Features of Revised Gender Action Plan

Output/Activities/Targets	Progress of Reporting Quarter (October – December 2018)	Cumulative Progress up to December 2018	Remarks
Output I: Flood and riverbank erosion risk mitigation functioning at priority reaches			
A1 Construction of riverbank protection structures using appropriate technology and methods A1-2 Rehabilitation/construction of embankments			
<p>1.Ensure women benefit from employment in construction</p> <p>Target 1.1: Specific condition included contractors’ bidding document whereby 5% unskilled labor opportunities be given to women⁷</p>	<p>1.1: During this quarter, limited construction work held at the sites as contractor mobilized his team only in late November due to monsoon flood. Due to using instrument and high-quality machinery no female labor worked at the construction sites out of total 85 regular labors but 5 female worked as cook 4 and as nurse 1.</p>	<p>1.1: A total of 957 female labors (5% of total) out of total labor force 20508 worked in construction sites.</p>	
<p>2.Ensure gender-related aspect of labor standard including equal wage for women and men for equal work</p> <p>Target 2.1Orientation sessions targeting 45 SMO staffs (at least one orientation in each SMO) i.e. SDE, Section Officers, surveyors and contractors’ site manager, site engineer and supervisors to verify and ensure that conditions are met</p>	<p>2.1: A total of 6 (six) training sessions on “Orientation session for SMO” has been held at the work sites for 5 work pages and 1 for site office staff of BWDB in this quarter. Total 78 participants (6 female) attended in these courses.</p>	<p>2.1: A total of 6 (six) training sessions on “Orientation session for SMO” has been held at the work sites for 5 work pages and 1 for site office staff of BWDB. Total 78 participants (6 female) attended in these courses.</p>	
<p>3. Ensure occupational health and safety, safe water supply, sanitation is in place (incl. separate toilets)</p> <p>Targets:</p> <p>3.1: Provisions for either separate toilets for women or arrangements for use of facilities in nearby communities and/or households</p>		<p>3.1: In 2-places separate toilet for women arranged with nationhood and 2-places built newly by the contractors;</p> <p>3.2: Sex-disaggregated data collection</p>	

⁷ Given the (large) physical infrastructure supported under the Loan, the EA requested the ADB to reduce the target for women’s engagement to 5-10% range in light of the major change in design of geo-bags for better river bank stability which -initially estimated at 125 kg/bag- were revised upward to 250 kg/bag. The heavy weight filling and stitching of geo-bags on barges and the strenuous dumping methods resulted in women’s reluctance to be involved in these activities.

Output/Activities/Targets	Progress of Reporting Quarter (October – December 2018)	Cumulative Progress up to December 2018	Remarks
3.2: Sex-disaggregated information infield monitoring quarterly reports and contractors' compliance reports	3.2: Sex-disaggregated data collection is on-going process	is on-going process	
A2 Formulating community disaster management units			
4. Form 40 Community Disaster Management Units (CDMUs) Target: 4.1: CDMUs (40) -consisting of 15 male and female volunteers/each-established with minimum 33% units led by women (baseline=0).	In progress		
5. Develop a community flood risk assessment and community risk reduction plan Targets 5.1: Community Flood Risk Assessment prepared identifying: (i) risks for women, men, children and vulnerable groups; and (ii) disaster response mechanism related to flood and erosion warning; 5.2: Community Risk Reduction Plan 20 plans prepared for 40 Units through participation of women volunteers specifying roles, provisions for women and men in terms of disaster preparedness at HH and community level; (iii) risk reduction measures 5.3: 60 locations identified and build community flood markers for flood warning information	In progress		
A3 Formulating community disaster management units			

Flood and Riverbank Erosion Risk Management Investment Program (FRERMIP), Project-1

Output/Activities/Targets	Progress of Reporting Quarter (October – December 2018)	Cumulative Progress up to December 2018	Remarks
<p>6. Initiate community-based flood warning dissemination procedures building on indigenous techniques</p> <p>Target 6.1: 50% of the units have flood warning mechanisms [Source: end-line beneficiary survey]</p>	In progress		These issues have been incorporated to the TOR of INGO for CDMU that has been recruited recently; so, work is yet to be started
<p>7. Disseminate regular warning messages in relevant to local context/language in line with national warning network</p> <p>Targets:</p> <p>7.1: 20 knowledge events held [Target: 100 women]</p> <p>7.2: 50% of households, including low-income households, and poor women living on the embankment participate have increased resilience through preventive measures at household level ([Source: end-line beneficiary survey])</p>	In progress		
A4 Construction of resettlement areas with basic infrastructure and facilities			
<p>8. Ensure effective consultation with women in the affected areas and maintain sex- disaggregated data on Project Affected Persons (PAPs) along with entitlement benefits, as per Resettlement Plan (RP)</p> <p>Target 8.1: Full compensation for 100% women PAPs as per RP entitlement.</p>	<p>8.1: Total 1071 APs (35 women) received resettlement grant and replacement cost.</p> <p>Total of 2956 EPs (85 women) received CCL through DC office.</p>	<p>8.1: A total of 261 women APs out of 4265 APs are eligible for entitlement benefits;</p> <ul style="list-style-type: none"> A total of 1071 APs (35 women) received resettlement grant and replacement cost 	

Output/Activities/Targets	Progress of Reporting Quarter (October – December 2018)	Cumulative Progress up to December 2018	Remarks
		<ul style="list-style-type: none"> A total of 2956 EPs (85 women) received CCL payment through respective DC office. 	
<p>9.Ensure that gender issues are considered when planning resettlement villages and community facilities</p> <p>Target 9.1: 33% women involved in planning meetings</p>	<p>9.1: It is ensured that 33% women involved in planning meetings.</p>	<p>9.1: It is ensured that 33% women involved in planning meetings.</p>	
Output II: Strengthened Institutional Systems for Flood and Riverbank Erosion Risk Management			
A5 Capacity enhancement of BWDB			
<p>10. Integrate a gender-specific module in the BWDB training</p>			
<p>11. Build capacity of female staff in BWDB</p> <p>Targets:</p> <p>11.1 10% women in training programs</p> <p>11.2 Provide 3 training (1 in BWDB HQ, 1 in design office and 1 in 3 SMOs) to at least 60 women staff in BWDB on working as women in BWDB – Challenges and issues</p>	<p>11.2: 1 session held on “training/ orientation session for SMOs” that covered all staff of site offices. A total of 14 participants were present including 2 female staff.</p>	<p>In November 2018, 1 (one) session held on “training/ orientation session for SMOs” that covered all staff of site offices. A total of 14 participants were present including 2 female staff.</p> <p>In June 2017, 1 (one) Gender specific course has been held for building capacity of female staff in BWDB HQ. Out of 32 participants, 25 were female. The main discussions were Importance of gender in water management project and concept of gender with government’s commitment. ADB’s Gender Specialist attended as resource person in this workshop.</p>	
Output III: Program Management Systems Operational			
A6: Implementation management			

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Output/Activities/Targets	Progress of Reporting Quarter (October – December 2018)	Cumulative Progress up to December 2018	Remarks
12. Establish MIS system with sex disaggregated data base for project reporting Target 12.1: Identify gender indicators, incorporate in monitoring system and ensure regular reporting on progress of	12.1: Using data from MIS for regular reporting on progress of GAP implementation	12. Established MIS system with sex disaggregated data base for project reporting 12.1 Using data from MIS for regular reporting on progress of GAP implementation	

Notes:

1. Quarterly Progress Report (QPR) is prepared based on revised version of Gender Action Plan, revised during ADB MTR Mission held in February 2018;
2. Based on project MIS, all activities and its' progress were reviewed and reported in the form of
 - i) Cumulative Progress; and
 - ii) Progress of Reporting Quarter with some explanations where necessary;

Issues/ Challenges with proposed measures to address them:

- (i) Capacity building of the women of the affected households through Income Generating and Livelihood Development Activities;
- (ii) Empowerment of women in the family affected by the river erosion is not impossible but very difficult due to change of location frequently as well as male domination and women are not willing to come forward;
- (iii) Extra effort is needed to ensure at least 5-10% involvement of women in construction work due to heavy duty and some areas are very conservative towards women's working outside home or beyond household work;

Comments/Remarks:

FRERMIP is working to implement GAP for livelihood development and empowerment of women.

Compiled by:

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Social Development and Gender Specialist
ISPMC, FRERMIP, BWDB, Dhaka

Appendix-G Compliance with Loan and Grant Agreement Covenants

Reference	Covenants	Status
Para. 1, Schedule 5	The Borrower and BWDB shall ensure that the Project is implemented in accordance with the detailed arrangements set forth in the FAM. Any subsequent change to the FAM shall become effective only after approval of such change by the Borrower, BWDB, and ADB. In the event of any discrepancy between the FAM and this Loan Agreement, the provisions of this Loan Agreement shall prevail.	Being complied.
Para. 2, Schedule 5	The Borrower and BWDB shall ensure that the PMO, the SMOs and the PMU employ sufficient staff for the duration of the investment program with adequate and relevant expertise in the field of project management, financial management, engineering, procurement, environmental and social safeguards implementation. The Borrower and BWDB shall keep the PMO, the SMOs and the PMU equipped with the necessary office space, facilities, equipment, transport arrangements, support staff and management information systems for the entire duration of the Investment Program.	Being complied.
Para. 3, Schedule 5	The Borrower and BWDB shall (a) ensure that all counterpart staff assigned to the PMO and each Sub-divisional Engineer assigned to the SMOs are allocated to the Investment Program and the Project on a full-time basis; and (b) undertake best efforts to ensure that all persons assigned to the PMO, SMOs and the PMU remain in their positions for a reasonable period of time and that staff replacements will not unduly disrupt implementation of the Investment Program and the Project. The Borrower and BWDB shall provide ADB reasonable opportunity to comment on any proposed appointment of persons to key positions in the PMO, SMOs, including, without limitation, the position of Project Director of the PMO and Executive Engineer of each SMO.	Being complied.
Para. 4, Schedule 5	The Project Director of the PMO shall hold the position not less than the rank of Superintending Engineer.	Complied.
Para. 5, Schedule 5	ADB acknowledges that BWDB is in the process of seeking approval for its proposal entitled "Need-Based Set-up of BWDB 2013", and that, if adopted, the new set-up would create a separate office in BWDB with responsibility for flood and riverbank erosion risk management, led by the Chief Engineer River Management. Should this proposal, or any other proposal to reorganize BWDB that may have implications on the implementation of the Investment Program and the Project, be adopted, the Borrower and BWDB shall consult in good faith and agree with ADB on any changes to the implementation arrangements laid down in the FAM, FFA and/or the PFR before taking any affirmative action there on.	Being Complied.

Flood and Riverbank Erosion Risk Management Investment Program (FRERMIP), Project-1

<p>Para. 6, Schedule 5</p>	<p>In the unforeseen event that the Borrower cannot avail of the proceeds of the Grant when needed, the Borrower shall undertake best efforts to find an alternative source of funding for the expenditures set out in the Grant Agreement, failing which ADB may require the Borrower to seek a reduction of the Project scope. In all other respects, the Borrower shall make available to BWDB all counterpart funds required for timely and effective implementation of the Project, including, without limitation, any funds required to keep the PMO and the SMOs fully equipped and fully staffed in accordance with the requirements set out in the FAM, to mitigate unforeseen environmental and social impacts, and to meet additional costs arising from design changes, price escalation in construction costs and/or unforeseen circumstances. The Borrower shall make the resources thus required available to BWDB on a quarterly basis for each fiscal year.</p>	<p>To be complied.</p>
<p>Para. 7, Schedule 5</p>	<p>The Borrower shall reimburse BWDB for any taxes and duties imposed in the territory of the Borrower for Goods, Works and Consulting Services used in carrying out of the Project no later than the fiscal year after the year in which the taxes and duties were incurred.</p>	<p>Being complied.</p>
<p>Para. 8, Schedule 5</p>	<p>The Borrower and BWDB shall ensure that each Sub project area is selected and approved in accordance with the selection criteria and approval process set out in Schedule 4 of the FFA. The Borrower and BWDB shall ensure that all relevant documents forming the basis for screening, selection and processing of Subproject areas are made available to ADB upon request and are kept available for such purposes for a minimum period of five years from the date of the project completion report for the Project.</p>	<p>Complied for Project-1. To be complied for succeeding tranches.</p>
<p>Para. 9, Schedule 5</p>	<p>The Borrower and BWDB shall ensure that the preparation, design, construction, implementation, operation and decommission of all Project facilities comply with (a) all applicable laws and regulations of the Borrower relating to environment, health, and safety; (b) the Environmental Safeguards; (c) the EARF; and (d) all measures and requirements set forth in the respective EIA and EMP, and any corrective or preventive actions set forth in a Safeguards Monitoring Report.</p>	<p>Being complied.</p>

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<p>Para. 10, Schedule 5</p>	<p>The Borrower and BWDB shall ensure that all land and rights-of- way required for all Project facilities are made available to the Works contractor in accordance with the schedule agreed under the related Works contract and all land acquisition and resettlement activities are implemented in compliance with (a) all applicable laws and regulations of the Borrower relating to land acquisition and involuntary resettlement; (b) the Involuntary Resettlement Safeguards; (c) the RF; (d) all measures and requirements set forth in the respective RP, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.</p>	<p>Being complied.</p>
<p>Para. 11, Schedule 5</p>	<p>Without limiting the application of the Involuntary Resettlement Safeguards, the RF or the RP,the Borrower and BWDB shall ensure that no physical or economic displacement takes place in a Subproject area until: (a) compensation and other entitlements have been provided to affected</p>	<p>Being complied.</p>

	people in accordance with the relevant RP; and (b) a comprehensive income and livelihood restoration program have been established in accordance with the relevant RP	
Para. 12, Schedule 5	The Borrower and BWDB shall ensure that the Project does not have any indigenous people's impacts within the meaning of ADB's Safeguard Policy Statement (2009). In the unforeseen event that the Project does have any such impact, the Borrower and BWDB shall take all steps required to ensure that the Project complies with the applicable laws and regulations of the Borrower relating to indigenous peoples and with ADB's Safeguard Policy Statement.	Complied.
Para.13, Schedule 5	The Borrower and BWDB shall make available the necessary budgetary and human resources to fully implement the EMPs and the RPs.	Being complied.
Para. 14, Schedule 5	The Borrower and BWDB shall ensure that all bidding documents and Contracts for Works contain provisions that require contractors to: (a) comply with the measures and requirements relevant to the contractor set forth in the relevant EIA; EMP and RP (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set out in a Safeguards Monitoring Report; (b) make available a budget for all such environmental and social measures;	Being complied.
Para. 14, Schedule 5	(C) provide BWDB with a written notice of any unanticipated environmental, resettlement or indigenous peoples risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the relevant EIA, EMP or RP; (D) adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport material sand construction; and fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition up on the completion of construction.	Being complied.
Para.15, Schedule 5	No later than 6 months after effectiveness, the Borrower and BWDB shall engage qualified and experience external experts or qualified NGOs under a selection process and terms of reference acceptable to ADB, to verify information produced through the Project monitoring process in respect of land acquisition and involuntary resettlement, and facilitate the carrying out of any verification activities related to land acquisition and involuntary resettlement by such external experts.	Complied.
	The Borrower and BWDB shall report any actual or potential breach of compliance with the measures and requirements set forth in an EMP or RP promptly after becoming aware of the breach.	Being complied.
	The Borrower and BWDB shall promptly inform ADB of the occurrence of any unanticipated environmental and/or social risks and impacts that would arise during construction, implementation or operation of the Project that were not considered in the relevant EIA, EMP or RP, in	Being complied.

	Detailed description of the event and proposed corrective action plan.	
	The Borrower and BWDB shall submit semi-annual Safeguards Monitoring Reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission.	Being complied.
Para. 16, Schedule 5	The Borrower and BWDB shall ensure that no proceeds of the Loan and/or the Grant are used to finance any activity included in the list of prohibited investment activities provided in Appendix 5 of the SPS.	Being complied.
Para. 17, Schedule 5	The Borrower shall ensure that all bidding documents and contracts for construction or civil works under the Project contain provisions that require contractors: (a) to comply with applicable core labor standards, labor laws and incorporate applicable workplace occupational and health and safety principles;	Being complied.
Para. 20, Schedule 5	(b) to eliminate discrimination in respect of employment and to not differentiate payment between men and women for work of equal value; (C) not to employ child labor; to eliminate forced or compulsory labor; to allow for freedom of association; (d) to maximize employment of local poor and disadvantaged persons for construction purposes to the extent possible, provided that the requirements for efficiency are adequately met; (e) to disseminate, or engage appropriate service providers to disseminate, information on the risks of sexually transmittable infections, including HIV/AIDS, to their employees and to members of the local communities surrounding the Project facilities, particularly to females; and (f) to implement the applicable provisions of the GAP developed for the Investment Program.	Being complied.
Para. 18, Schedule 5	The Borrower and BWDB shall comply with and implement the GAP in accordance with its terms, allocate adequate resources for such implementation, and shall monitor and report to ADB on key gender outcome and output targets in accordance with the project performance and monitoring system to be developed for the Investment Program and the Project.	Being complied.
Para. 19, Schedule 5	To ensure that all under water works or riverbank protection facilities to be constructed under the Project are carried out in accordance with the applicable design standards, specifications and construction methods, external experts shall in spec teach selection completed under each Works contract using high- resolution underwater echo sound surveying equipment with technical specifications acceptable to ADB and through diving inspections. BWDB Shall ensure that all survey and inspection	Being complied.

	results are made available to ADB upon request and are kept available for such purposes for a minimum period of five years of the project completion report of the Project.	
Para. 20, Schedule 5	If and when ADS may so request from time to time, BWDB shall recruit and engage experts with qualifications, experience and terms of reference acceptable to ADB in order to analyze difficulties or constraints encountered in implementing the Investment Program or the Project, and advise on remedial measures or technological innovations to promote efficiency in project implementation.	To be complied.
Para. 21, Schedule 5	BWDB shall timely notify the Bangladesh Inland Water Transportation Authority, DDM and other relevant agencies of any areas where riverbank protection infrastructure will be or has been constructed. BWDB shall take necessary measures in consultation with such agencies to ensure that dredging or construction works undertaken by such agencies do not cause any damage to the riverbank protection infrastructure.	Being complied.
Para. 22, Schedule 5	The Borrower and BWDB shall ensure that (a) BWDB inspects and maintains the embankments, regulators and riverbank protection works rehabilitated or constructed under the Project in accordance with the operation and maintenance plans to be developed under the Investment Program and/or the Project.;(b) BWDB submits annually to the Ministry of Water Resources budget requests with a separate line item to cover the cost of maintenance and repair of the embankments, riverbank protection works and regulators in accordance with such operation and maintenance plans; and (c)the Borrower will allocate in its annual budget adequate resources for BWDB to carry out such maintenance and repair works and make the resources thus allocated available to BWDB on a quarterly basis.	To be complied.
Para. 23, Schedule 5	BWDB shall create strategic stockpiles of geo-textile bags for emergency riverbank protection works and repairs in accordance with the emergency and operation and maintenance plans to be developed under the Investment Program and/or the Project.	To be complied.
Para. 24, Schedule 5	BWDB shall provide local communities with land use rights for embankment land-side slopes rehabilitated or constructed under the Project through five-year lease contracts that are designed to promote livestock grazing, cultivation of trees or other suitable vegetation, or other activities conducive to embankment maintenance in a manner consistent with the operation and maintenance plans to be developed under the Investment Program and/or the Project.	To be complied.
Para.25, Schedule 5	The Borrower and BWDB shall remain committed to the road map and the policy framework underlying the Investment Program and implement the policy and institutional reform actions identified under	Being complied.

	the road map in accordance with the time schedule set out therein.	
Para. 26, Schedule 5	The Borrower and BWDB shall keep ADS informed, through the Water Consultative Committee or otherwise, of discussions (a) among government and quasi-government bodies with responsibility for water sector development; and (b) with Japan International Cooperation Agency ("JICA"), the Kingdom of the Netherlands, World Bank and other multilateral and bilateral agencies, that have implications for the implementation of the Investment Program, and shall provide ADB with an opportunity to comment on any proposed interventions in the water sector resulting from such discussions. The Borrower and BWDB shall take ADB's views into consideration before finalizing and implementing any such proposals.	Being complied.
Para. 27, Schedule 5	The Borrower and BWDB shall (a) comply with ADB's Anticorruption Policy(1998,as amended to date) and acknowledge that ADB reserves the right to investigate directly, or through its agents, any alleged corrupt, fraudulent, collusive or coercive practice relating to the Project; and (b) cooperate with any such investigation and extend all necessary assistance for satisfactory completion of such investigation	Being complied.
Para.28, Schedule 5	The Borrower and BWDB shall ensure that the anti corruption provisions acceptable to ADB are included in all bidding documents and contracts, including provisions specifying the right of ADB to audit and examine the records and accounts of BWDB and all contractors, suppliers, consultants, and other service providers as they relate to the Project.	Being complied.
Para,29, Schedule5	The Borrower and BWDB shall announce the Project and business opportunities associated with the Project on their websites. In addition, the websites shall at least disclose the following information in relation to Goods, Works and Consulting Services procured for the Project: (a) the list of participating bidders; (b) the name of the winning bidder; (c) the amount of the contracts awarded; and (d) the Goods, Works and Consulting Services procured.	Being complied.
Para.30, Schedule 5	The Borrower shall conduct periodic inspections and random spot checks of civil servants' and contractors' activities related to the procurement of Goods, Works and Consulting Services and to fund withdrawals and settlements under the Project.	Being complied.

Appendix-H Capacity Building

Table 6-1 Status of Local Trainings, PMO-FRERMIP

Item	Trainees	Number	Unit	Status	Time	Executing Agency
River Engineering	20	2	Course	Complete	April 2016	BUET
River Training Techniques	20	2	Course	Complete	February 2017	BUET
Riverbank Protection	20	1	Course	Complete	July 2018	BUET
Survey and Evaluation	10	1	Course	Pending	-	IWM
Resettlement	15	1	Course	Pending	-	CEGIS
Environment	15	1	Course	Complete	October 2018	CEGIS
Capacity Building for DDM	15	2	LS	Pending	-	-

Table 6-2 Status of Overseas Training/Study Tour, PMO-FRERMIP

Item	Trainees	Number	Unit	Status	Time	Place
River Morphology	8	1	Course	Complete	September-October 2016	The Netherlands
River Training Techniques	8	1	Course	Complete	June-July 2017	The Netherlands
Study Tour-1	5	1	Tour	Complete	August 2016	China
Study Tour-2	10	1	Tour	Complete	October 2017	America-Canada
Study Tour-3	10	1	Tour	Complete	June 2018	Australia
Study Tour-4	10	1	Tour	Complete	September 2018	The Netherlands and Germany
Study Tour-5	5	1	Tour	-	-	-
Study Tour-6 (Asian Countries)	8	1	Tour	-	-	-
Study Tour-7 (Asian Countries)	8	1	Tour	-	-	-

Implementation Progress of Training Activities by ISPMC

Sl.	Description	Completed			Date				Remarks	
		No. of Courses	No. of Trainees			FY 15-16	FY 16-17	FY 17-18		FY 18-19
			M	F	Total					
ISPMC Line Item-1: Workshops, Training and Seminars (Provisional Sum)										
A. Workshops										
1	Workshop on Draft Inception Report	1	83	40	123	09-Dec-2015				Pan Pacific Sonargaon, Dhaka
2	River Stabilization and Preliminary Master Plan	1	99	41	140		07-Dec-2016			Pan Pacific Sonargaon, Dhaka
3	National Stakeholder Workshop on the River Stabilization Plan	1	170	80	250			29-Nov-2017		Hotel Radisson, Dhaka
Sub Total		3	352	161	513					
B. Training:										
1	Training on Environmental Management at 3 sites	3	30	0	30	26-28 Apr-2016				Chauhali, Harirampur &
2	Training on International River Stability	1	90	20	110		08-Dec-16			Level-4 of WAPDA Building
3	Training for Task Force on Sand-filled Geotextile Bags	1	24	0	24		22-Dec-16			Level-4 of WAPDA Building
4	Training: Gender Awareness for BWDB Engineers	1	7	25	32			31-Jul-17		BWDB Design Office Conference Room
5	Training: Gender Awareness for SMO Engineers and Contractors	7	32	3	35				21-22-Dec-2018	
Sub Total		13	183	48	231					
C. Conferences & Discussions										
1	International Conference on Scour and Erosion	1	3	0	3		12-15 Sep-2016			Oxford University, UK With the DG, BWDB & PD, FRERMIP
2	International Large Rivers Conference	1	3	0	3		17-22 Apr-2017			Delhi, India with solely ISPMC
3	a) Round Table Discussion: River Management	1	20	0	20	28-Mar-16				Pan Pacific, Sonargaon
	b) Round Table Discussion: Presentation from the DG,	1	20	0	20	25-May-16				Lake Castle, Gulshan
	c) Round Table Discussion: Capacity Development	1	30	0	30		28-Oct-16			Pan Pacific Sonargaon
Sub Total		5	76	0	76					
ISPMC Totals		21	611	209	820					

Appendix-I Database Inventory

Bathymetric Survey Summary

Projects	Surveys	End Date	Start Date
Bazar Station Groyne Sirajganj	16	2014-Jul-12	1998-Jun-17
Betil Spur	10	2014-Sep-20	2002-Oct-26
Chandan Baisha groyne	5	2011-Nov-26	2002-Jul-05
Chandpur	6	2003-Aug-01	2001-May-01
Chauhali	17	2018-Sep-24	2016-May-04
East Guide Bund	10	2004-Jul-25	2004-Apr-11
Enayetpur Spur	27	2016-Aug-20	2002-Oct-26
Ganges	4	2001-Oct-19	2001-Oct-19
Harirampur	11	2018-Sep-11	2012-Jun-15
Hasnapara Spur	1	2002-Jul-30	2002-Jul-30
Kalitola Groyne	56	2016-Oct-28	2001-Sep-04
Koijuri	8	2017-Nov-09	2004-Nov-23
Lower Jamuna Full River	10	2018-Sep-10	2015-Sep-15
Mathuapara Groyne	66	2016-Aug-08	1998-Dec-23
MDIP	8	2009-Jan-15	2006-Aug-23
Meghal Spur	25	2016-Jul-31	2001-Sep-01
PIRDP	107	2011-Nov-15	1992-Apr-30
Ranigram Sirajganj	442	2016-Aug-03	1998-May-30
Sailbari Revetment	11	2003-Oct-17	2001-Sep-08
Sailbari Revetment Down	23	2016-Jul-13	1998-Oct-02
Sailbari Revetment Up	43	2016-Jul-13	1998-Oct-02
Sariakandi Groyne	45	2016-Aug-08	2001-Oct-29
Simla Spur	13	2016-Sep-11	2003-Oct-26
Sirajganj Full River	81	2016-Sep-11	1998-Jun-17
Sirajganj Revetment	1057	2016-Dec-20	1998-May-06
Subagacha Spur	9	2013-Jul-04	2001-Sep-01
Zaffarganj	8	2018-Sep-09	2016-Jul-19
Drone Survey	4	2018	
Total	2123		

Appendix-J List of Memos

Sl. No.	Memo Subject	Memo No.	Memo Date
1	Implementation Design of the Riverbank protection at Chauhali	ISPMC- FRERMIP-18 /80	29-Oct-2015, updated 03-Feb-2016
2	First quality checking of geobag delivery, contract G1	ISPMC- FRERMIP-028	16-Nov-2015
3	Design of underwater works at Harirampur	ISPMC- FRERMIP-073	28-Jan-2016
4	Design Guidance for Zaffarganj	ISPMC- FRERMIP-079	02-Feb-2016
5	Use of resources for 1 km of riverbank protection works at Kaijuri	ISPMC- FRERMIP-154	02-Jun-2016
6	Geotechnical stability of JRB-1 embankment	ISPMC- FRERMIP-427	22-Nov-2017
7	Savings in Concrete Blocks at Chauhali and Zaffarganj	ISPMC- FRERMIP-243	03-Nov-2016
8	Memo on Pilot Works	ISPMC- FRERMIP-0264	15 Dec-2016
9	Slope failure during construction of permanent wave protection at Chauhali	ISPMC- FRERMIP-0314	23-Feb-2017
10	Draft memo on site monitoring from 2015 to 2017	ISPMC- FRERMIP-316	02-Mar-2017
11	Background memo and bidding document for pilot works involving grout-filled jute mattresses	ISPMC- FRERMIP-408	04-Oct-2017
12	Updated guideline for riverbank protection: additional investigations on the stability of geotextile bags	ISPMC- FRERMIP-469	08-Mar-2018
13	Adaptation works summary of Chauhali April 2018	ISPMC- FRERMIP-487	12-Apr-2018
14	Submission of Site Monitoring Report 2017	ISPMC- FRERMIP-495	09-May-2018
15	Background on launching aprons – follow up of discussions with the design office.	ISPMC- FRERMIP-517	18-Jul-2018
16	Review of bank protection design and bank failures in Chauhali By ISPMC for Chauhali committee	ISPMC- FRERMIP-522	31-Jul-2018
17	Assessment of slope failure at Chauhali	ISPMC- FRERMIP-534	27-Sep-2018
18	Updated memo about the downstream failure at Chauhali	ISPMC- FRERMIP-557	29-Nov-2018
20	Pilot works site visit report	ISPMC- FRERMIP-581	12-Feb-2019
19	Review of clay cladding requirements for Kaijuri embankment	ISPMC- FRERMIP-583	17-Feb-2019
21	Proposed changes to grout mattress design	TBC	