FRERMIP
Flood and Riverbank Erosion Risk Management Investment Program

Bangladesh Water Development Board
Asian Development Bank

Flood and Riverbank Erosion Risk Management Investment Program – Tranche 1

ADB Loan 3138-BAN (SF)/GON Grant 0396 (EF)

Institutional Strengthening and Project Management Consultant (ISPMC)

QUARTERLY PROGRESS REPORT NO. 20

FOR

April - June 2020

Prepared by:

ISPMC
Institutional strengthening and project management consultant

Joint Venture
nhc northwest hydraulic consultants
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FRERMIP

Flood and Riverbank Erosion Risk Management Investment Program

Reference: ISPMC JV NHC-EMM
ISPMC- FRERMIP-698 soniafrermip@gmail.com

18 October 2020

To
Md. Rafiqul Islam Choubey,
Project Director,
Flood and River Bank Erosion Risk Management Investment Program
152/3/B Bir Uttam, Kazi Nuruzzaman Road, Panthopath,
Firoz Tower, (13th Floor) Dhaka-1205, Bangladesh.

Subject: **Submission of Quarterly Progress Report No. 20, April to June 2020.**
Ref: **As per Institutional Strengthening and Project Management Consultant Service Contract, Clause 9 (i).**

Dear Sir,

Please find enclosed Quarterly Progress Report No. 20 for the period April-June 2020 for "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 (November 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).

Unfortunately, the currently ongoing pandemic and associated lock-downs as well as the end of our consulting contract on 30 June 2020 have delayed the compilation of background data for this report.

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

Sincerely,

JV Northwest Hydraulic Consultants – Euroconsult Mott MacDonald

(Knut Oberhagemann)
Team Leader
Cc: Office file;
Deputy Team Leader, Sharif Al Kamal;

PROJECT DIRECTOR • FRERMIP

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Development Partners:

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16. Embassy of the Kingdom of the Netherlands, Gulshan, Dhaka

ABBREVIATIONS AND ACRONYMS

AP	-	Affected Person
ADB	-	Asian Development Bank
ADP	-	Annual Development Program
BDPC	-	Bangladesh Disaster Preparedness Center
BDT	-	Bangladeshi Taka
BDRCS	-	Bangladesh Red Crescent Society
BRM	-	Bangladesh Resident Mission
BWDB	-	Bangladesh Water Development Board
CbFRM	-	Community-based Flood Risk Management
CCL	-	Cash Compensation under Law
CDMU	-	Community Development Medical Unit
CEGIS	-	Center for Environmental and Geographic Information Services
CRO	-	Chief Resettlement Officer
CV	-	Community Volunteer
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	-	Implementing 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
JMREMP	-	Jamuna-Meghna River Erosion Mitigation Project (2002-2011)
JVT	-	Joint Verification Team
km	-	Kilometer
LA	-	Land Acquisition
LAP	-	Land Acquisition Plan
MDIP	-	Meghna-Dhonagoda Irrigation Project (1977-1983)
Mil	-	Million (1,000,000)
MIS	-	Management Information Systems
MoDMR	-	Ministry of Disaster Management and Relief
MoWR	-	Ministry of Water Resources
O&M	-	Operation and Maintenance
PD	-	Project Director (BWDB)
PM	-	Project Manager (DDM)

PIRDP	-	Pabna Irrigation and Rural Development Project (1978-1992)
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
TN	-	Technical Note
ToR	-	Terms of Reference
ToT	-	Training of Trainers
UDMC	-	Upzilla Disaster Management Committee
USD	-	United States Dollars
VDP	-	Village Defense Party
VRDS	-	Voluntary Rural Development Society

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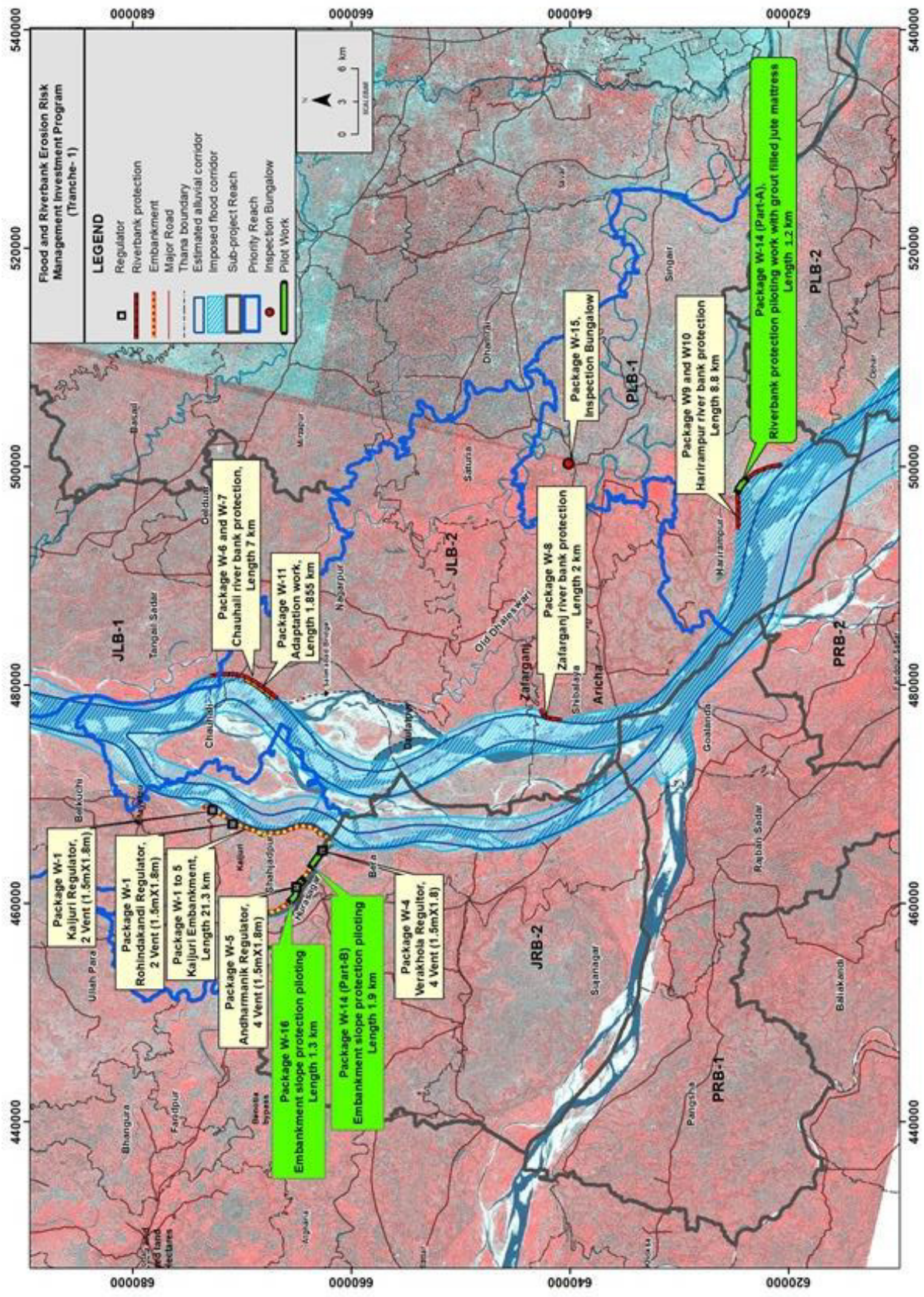

Figure 0-1 Index Map (Tranche-1)

Table 0-1 Project Progress at a glance

1.	**Basic Data**	
	ADB Loan Agreement Number	3138-BAN(SF)
	GON 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	
Government of Bangladesh (GOB)	23.3	45.3	34.8	103.4
Asian Development Bank (ADB)	65	100	90	255
Government of The Netherlands (GON)	15.3	0	0	15.3
Total	103.6	145.3	124.8	373.7

3. Milestones

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

Milestone	Project		
	I	II	III
Estimated Completion Date	2021 June 30	2023 December 31	2024 August 31

Milestone	Date
Last ADB Review Mission	24-26 September 2019

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 (%)	Progress Weighted (%)
1.	Establishment & Recruitment	1.1 PMO Establishment and Staffing	2	100	2.00
		1.2 ISPMC Consultants Recruitment	2	100	2.00
		1.3 NGO Recruitment	2	100	2.00
2.	Implementation; Tranche-1	2.1 Detailed Design	2	100	2.00
		2.2 Tender Documents Preparation	6	100	6.00
		2.3 Tendering and Contract Award	6	100	6.00
		2.4 Land Acquisition and Resettlement	8	96	7.68
		2.5 Project Management	6	93	5.60
		2.6 Physical Completion of Works	32	100	32.00
		2.7 Financial Disbursements	4	96	3.84
3.	Knowledge Base & Capacity	3.1 Knowledge Base & Tech. Studies	4	95	3.80
		3.2 CBFRM Activities	6	100	6.00
		3.3 MIS Project Mgmt Module	4	94	3.76
4.	River Study, Piloting & Master Plan	4.1 Long-term stabilization study	4	95	3.80
		4.2 Land Recovery / Piloting	2	97	1.94
5.	Preparation; Project-2	5.1 Feasibility Study; Project-2	6	100	6.00
		5.2 Detailed Design; Project-2	4	100	4.00
Totals			**100**		**98.42**

5.	**Financial Progress**			
Financial Indicator		BDT Million	US$ Million	% of Total
Estimated Project Cost (Source: DPP Page 1)		8,674	108.43	100
PMO Expenditures		7,964	99.55	92
ADB and GON Disbursement		5,645	71.20	96
Total Reimbursement		5,086	63.60	86

*1 USD= 80 Taka (Source : Revised Development Project Proforma (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 5,000 hectares per year to less than 2,000 hectares (Figure 1-1 below), ten thousand people are affected annually by river erosion of floodplain lands.

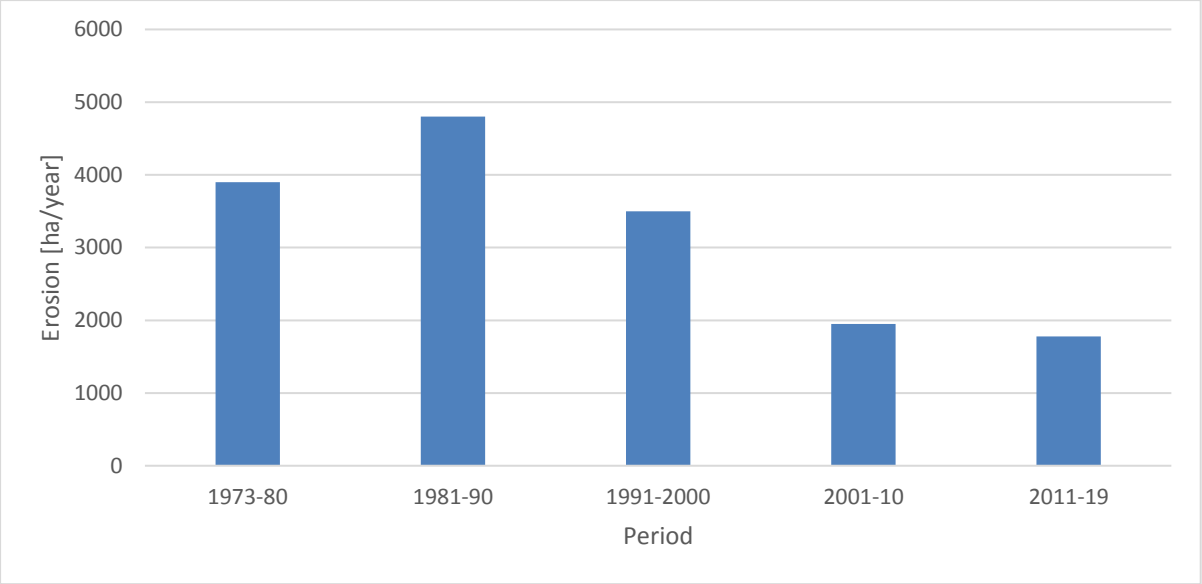

Figure 1-1 Decadal erosion rates of the Jamuna-Ganges-Padma River (Source: CEGIS 2020)

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 of embankments 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 management of riverbank erosion and flood protection is essential for the economic growth and poverty reduction in affected areas.

In 2001, the BWDB undertook the 'Jamuna-Meghna River Erosion Mitigation Project' (JMREMP) with financial assistance from ADB with the dual purpose to firstly mitigate riverbank erosion at the Pabna Irrigation and Rural Development Project (PIRDP) and the Meghna-Dhonagoda Irrigation Project (MDIP) through sustainable and cost-effective protective works; and secondly to develop a framework for a sustainable erosion risk management system to be applied elsewhere in the country. JMREMP has developed the concept of phased planning (based on erosion prediction, river surveys, and flexible fund allocations) and implementation to adapt to changing river conditions known as adaptive management. The most important development of the project is a special method of construction of underwater revetment by dumping sand filled geo-textile bags from positioned barges. 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

the BWDB in 2010. 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 (NHC, 2013). This initiative includes recovering floodplain land lost during the widening process of the rivers which has persisted since the 1960s[1].The ADB Facility Administration Manual, June 2014 (ADB, 2014) 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, was completed during the dry season 2016/17. 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 March 2021, 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). 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 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 targeted sub-project reaches.

1.2 The Project

The project has three funding partners including two international development partners: Asian Development Bank (ADB), Government of the 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 **(**ADB, 2014**)**, except for the postponement of some activities due to the reduction of available loan financing. The anticipated outputs of the project are 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, some 17.8 km of riverbank protection and 21.3 km of flood embankments (refer to the Project Map **Figure 0-1**) were constructed. Adding to that, 4.4 km of grout filled jute mattress pilot work was completed as wave protection works at two project sites. Project outputs also include social and environmental safeguards; institutional, knowledge-base, capacity development; and community-based 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

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

implementation process. Table 0-1 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 extended until June 2020 to complete the activities, namely, the embankment construction and pilot works including monitoring during the 2019 flood season. The ADB has approved the Project-1 extension of one-year on 15 November 2018. After the first revision of the Development Project Proforma (DPP), approved on 15 June 2017, the Project Management Office (PMO) has revised the DPP for second time, which was approved on 1st November 2018. The first revised DPP, amongst others, increases the budget for land acquisition and resettlement to complete the embankment works, without increasing the overall amount. The 2nd revised DPP also excluded work packages W-12 and W-13 (service packages during 1st revision S-03, S-05 and S-07). The ADB approved the extension of Project-1 until March 2021 on 28 May 2020 followed by the Ministry of Water Resources approval on 29 June 2020 to complete the remaining mostly administrative project activities given the fast developing covid19 pandemic situation.

A first zero-cost Variation Order for the ISPMC S01 package 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 for consultancy service was approved on 23 March 2019 and the 4th zero-cost variation of the consultancy services was approved on 15 December 2019 and it extends the consultancy services until April 2020. A 5th zero cost variation for service extension until 30 June 2020 has been approved from the Board.

1.3 Overall Progress

This quarter was characterized by a two-month long Government Holiday associated with the covid 19 pandemic. From 26 March until 30 May all government offices were closed and construction work practically came to a stand-still. This notwithstanding, the preparation of Tranche-2 documents for ADB review, largely through the ISPMC team continued in full swing and allowed the loan fact finding mission for Tranche-2 to kick-off on 30 June 2020, the last day of this fiscal year and this reporting quarter.

Project-1 has substantially completed construction activities, particularly:

(i) the construction of riverbank protection for a length of 17.8 km, contracted in 2015/16 with most of the underwater works completed by June 2016, and the remaining works, including adaptation works completed by June 2018.

(ii) the construction of 21.3 km of flood embankment and 4 regulators, contracted during the dry season 2017/18, substantially constructed during the dry season 2018/19, and completed by June 2020.

(iii) The construction of 4.4 km of pilot wave protection consisting of grout-filled jute mattresses (3.2 km on the JRB-1 embankment and 1.2 km as riverbank protection in PLB-1), first contracted during the dry season 2018/19 and completed by June 2020.

While the underwater protection has performed very well, despite deep scouring to, in places, 28 m below the low water level and 25 m below the original apron setting level, a number of surficial failures occurred at the Chauhali site, mostly after placing the final wave protection in 2017. Initial repair and adaptation works were conducted during the 2018 dry season for a total length of some 3.8 km under existing work packages as well as a dedicated adaptation package. No further damages were observed in the adapted areas during the course of the 2018 and 2019 flood seasons. Only the downstream end section of the works was damaged after the river scoured to - 33m+PWD or 11 m below design scour level on 24 September 2018.

No adaptation works were required for Harirampur and Zafarganj riverbank protection as no major erosion or river deepening occurred at these sites.

Over the years, geotextile bag revetments have been built at a stable cost level for around USD 3 million or BDT 24 Crore per kilometer in 2018 prices (Figure 1-2). It is noteworthy that only the works built at 40% below the average construction cost at Kaijuri between 2009 and 2011 shows some damages, while the rest is performing well. Overall, geotextile bag revetments appear to be the most cost-effective, and sustainable solution built till date, even below spur cost, historically considered more cost effective than continuous revetment works. Riverbank protection advances have been documented widely, including a number of memos and reports authored by the ISPMC FRERMIP. A list of memos produced by ISPMC is attached in Appendix-J.

The construction of 21.30 km embankment from Kaijuri to Verakhola including 4 regulators started on 15 February 2018 for contract packages W-01 to W-05. Progress of these packages (W1 to W5) are 100%. Construction activities are already completed within March 2020.

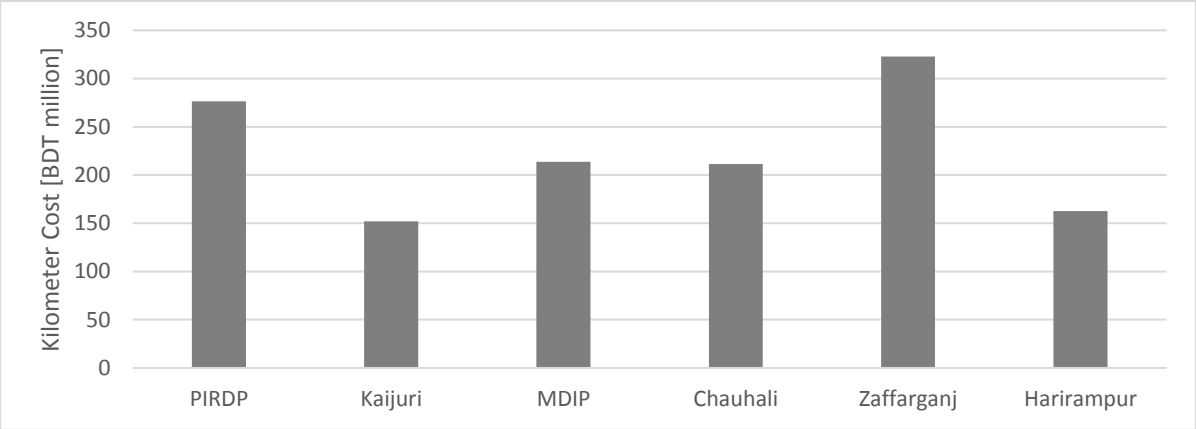

Figure 1-2 Kilometer cost of geotextile bag revetments built in Bangladesh (in 2018 prices)

The overall weighted project progress is presented in Table 0-1 and shows that, compared with the total estimated projected cost, the physical progress is 98.42%, PMO expenditure is 91.82% and ADB (plus GON) disbursement compared to total project cost is 65.08%. The following Table 1-1 shows the relative comparison between the total project cost, ADB loan amount and the comparative percentage progress.

Table 1-1 Comparative Project Cost and ADB Disbursement Progress (until 30 June 2020)

Total Project Cost (BDT Million)	Total Project Aid (ADB and GoN) (BDT Million)	ADB and GoN Disbursement Progress compared to the total project cost (%)	ADB and GoN Disbursement Progress compared to the Aid amount (%)
8,674.44	5,907.49	65.08	95.56

1.4 This Report

Quarterly Progress Report No. 20 covers the period 01 April 2020 to 30 June 2020. The report describes activities carried out during the quarter, which included: summary of implementation activities and other project sub project activities.

2. PROJECT ACTIVITIES

2.1 Introduction

The BWDB FRERMIP Project Management Office (PMO) started functioning in April 2014. In 2014/15 it 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). After the riverbank construction was completed in 2016/17 adaptation works was implemented at Chauhali in 2017/18 and the Koijuri embankment construction started at which point a third Sub-Project Management Office in Koitala was activated. During the 2018/19 dry season, construction work largely related to the Koijuri embankment and pilot works started. The PMU DDM has implemented the CbFRM sub-component from 30 August 2018 to 30 June 2019.

The Joint Venture of Northwest Hydraulic Consultants (nhc) and Euroconsult Mott Macdonald (EMM) worked as Institutional Strengthening and Project Management Consultant (ISPMC) from 8th September 2015 until 30 June 2020. The ISPMC has completed numerous activities including a) preparing i) the Project Inception and Mid-Term reports, ii) a number of technical memos, iii) summary study team and feasibility report for tranche 2; b) supporting overall project management and capacity building activities; c) advising on design, construction and resettlement activities during implementation; d) preparing management support tools including data bases; e) providing regular quarterly progress reports; f) and preparing the terms of reference for several supporting studies. The status of implementation activities in the reporting quarter is discussed in the following sections, and summaries and detailed tables are provided in Appendix-A and Appendix-B respectively.

Table 2-1 provides the status of annual ADP expenditures. All the embankment works were completed in March 2020 and grout filled mattress work were completed in early June 2020. Work progress hampered due to the unavailability of the labors for the pandemic COVID-19 issue. The PMO expects to spend the remaining fund allocation within March 2021.

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

Fiscal Year	ADP/RADP/RADP Re-Allocation	Actual Expenditure	Percentage of Budget Utilization
2014/15	311.20	217.78	70%
2015/16	2,108.20	2,074.34	98%
2016/17	2,290.80	2,246.11	98%
2017/18	1,331.50	1,106.21	80%
2018/19	1,676.30	1,633.77	97%
2019/20	9,570.00	6865.59	71%
2020/21 (Last Fiscal Year)	4,406.00		-

2.2 PROJECT ASSET IMPLEMENTATION

2.2.1 Introduction

Tables A-1 and A-2 (Appendix A) show the type, number and total cost of the project according to the 2nd revised DPP. The cost of the 21.30 km of embankment (plus associated structures) is BDT 1,1291.88 lakh as per actual cost. The 17.8 km of riverbank revetment actual cost including geobags supply packages is 29204.34 lakh. In line with the 2nd revised DPP (September 2018) the best estimate of the final cost for all project assets currently amounts to 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 for land acquisition) (source, PMO December 2019). The total estimated expenditure sometimes varies due to contract variations which are currently under preparation.

Using cross-link tables that connect these category items (and Asset Types) with other financial indicators, it is possible to produce tables which show project progress based on ADB Financial Categories (Table A-3) or DPP Components (Table A-4 and A-5). Table A.2 and Table A.5 shows the detail breakdown of RDPP budget estimation.

2.2.2 Bidding Activities

All bidding activities under the FRERMIP project have been completed. Bidding details are provided in Table B-2 (Appendix-B).

2.2.3 Design Activities

The design work for Tranche-1 is completed with work undergoing on the design for Tranche 2 riverbank protection works and an addendum to the feasibility study.

2.2.4 Implementation Activities

In this quarter all work packages could be substantially completed. Data as recorded in the IMED are shown in the following table.

Table 2-2 Summary of Implementation activities – up to 30 June 2020

Contract	Locations	Start date (as per contract)	Completion date (as per contract)	Contract Amount in Lac	Amount paid in Lac	Percent completed
W-01 to W-05	Kaijuri	05-03-18 15-02-18 15-02-18 01-03-18 15-03-18	31-03-20 02-03-20 02-03-20 31-03-20 31-03-20	12029.43	11291.89	100
W-6 & W-7	Chauhali	25-10-15	15-04-18	8895.6	8293.58	100
W-8	Zaffarganj	20-02-16	20-01-18	4850.00	4668.69	100
W-9 & W 10	Harirampur	15-01-16	09-02-18	5705.15	5673.15	100
W-11	Chauhali	20-03-18	31-01-19	670.119	639.4695	100
W-14	Pilot	01-10-18	02-04-20	3197.69	3197.66	100
W-15	Inspection Bungalow	25-06-18	26-12-19	70.452	77.05	100
W-16	Pilot	18-09-19	12-06-2020	1232.2	1211.8	100

Details of the ongoing contract works are:

All the construction work for the embankments, regulators, provision of clay cladding and vetiver grass and excavation of approach channels to the regulators under contract packages W-01/2016-17 to W-

05/2016-17 have been completed on March 2020. All the post work surveys for measurement were conducted after completion of the works and the date of measurement by task force are as follows;

Contract package W-01/2016-17 13 May 2020 to 14 May 2020
Contract package W-02/2016-17 15 May 2020
Contract package W-03/2016-17 16 May 2020
Contract package W-04/2016-17 17 May 2020 to 18 May 2020
Contract package W-05/2016-17 19 May 2020

All works under pilot works package W-14/2017-18, were completed in early April 2020.

The W-16/2018-19 pilot work package has both a grout mattress construction and survey component. Survey work was completed in the last quarter and the survey contractor, IWM, provided the draft survey report on 27 March 2020. Additional multibeam survey was conducted between 21 and 25 June 2020 at Chauhali, Zaffarganj, Harirampur, Koijuri, and Benotia to identify the vulnerability of the sites. The grout filled mattress work under W-16/2018-19 was completed on 8th June 2020.

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 Project
10. ISPMC performance compliance with ToR

2.3.1 Supporting Service Studies

The project comprises four service contracts for supporting Project activities. The status of the four supporting services are summarized in Table 2-3.

Table 2-3 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 08 September 2015, and their work is estimated to be around 98 % complete. 5th variation was submitted on 25th March for the extension of consultancy services until 30 June 2020 and got approved.
S-02	Resettlement Plan Implementation	The Resettlement INGO signed a contract with BWDB on 16- Mar-2016, and their work is estimated to be 100 percent completed. Details are provided in Section 2.3.3.
S-04	NGO Service for Community based Flood Risk Management (DDM)	The contract was signed on 30 August 2018 with implementation starting on 01 September, 2018. The contract has ended in 30 June 2019. More details are provided in Section 2.3.5.

S-06	Erosion Prediction	CEGIS has completed the contracted work under this project in April, 2018.

2.3.2 Environmental Management

Due to COVID-19 pandemic situation, the scheduled visit to embankment, regulator packages was cancelled. The semi-annual environmental monitoring report was produced by collecting necessary data/photo/status from the field offices. The report for the period of Jan20 to June20 was submitted to ADB from PMO on 7th July 2020.

2.3.3 Resettlement Services

There was significant progress in resettlement service during this quarter as summarized in Table 2-4 .

Table 2-4 Summary of Resettlement Grant Received by the AP

Sl No	Location of Intervention with sub-reaches	Upazilla/ District	Type of Loss	Approved by PVAT & JVT	No. of APs & CPR Title/ Non-title/Tenants					Affected Households		Status of Compensation	
					Title	Non Title	Tenants	CPR	Total	Male	Female	Cumulative up to June 2020	
												CCL	Resettlement Grant
1	Embankment (Koijuri to Hurasagor) incl. 4 regulators in JRB-1	Shajadpur of Sirajgonj and Bera of Pabna	Residence & Business structure, Business loss, Agriculture plot	Approved by JVT & PVAT	949	1305	56	12	2322	2081	229	89% CCL payment for structure holders done & 88% CCL payment for land Owners done	Resettlement Grant distributed among 2270 Aps.
2	Riverbank protection work at Chauhali JLB-2	Chauhali of Sirajgonj; Nagorpur&Sadar of Tangail	Residence & Business structure, Business loss, Agriculture plot	Approved by JVT	176	14	00	01	191	179	11	90 % CCL payment done at Tangail part. 73% CCL payment done at Sirajganj part	Resettlement Grant distributed among 139 APs and replacement cost for 36 Aps
3	Riverbank protection work at Zafargonj JLB-2 (1.4 Km)	Shibaloy of Manikganj	Residence & Business structure, Business loss, Agriculture plot	Approved by JVT	38	50	12		100	85	15	72 % CCL payment done	Resettlement Grant distributed among 90 APs and replacement cost for 8 Aps

Sl No	Location of Intervention with sub-reaches	Upazilla/ District	Type of Loss	Approved by PVAT & JVT	No. of APs & CPR Title/ Non-title/Tenants					Affected Households		Status of Compensation	
					Title	Non Title	Tenants	CPR	Total	Male	Female	Cumulative up to June 2020	
												CCL	Resettlement Grant
4	Riverbank protection work at Zaforgonj JLB-2 (0.6 km)	Shibaloy,Manikganj	Residence & Business structure, Business loss, Agriculture plot	Approved by JVT	26				26	22	04	80 % CCL payment done	Resettlement Grant distributed among 26 APs
5	Riverbank protection work at Harirampur PLB-1	Harirampur, Manikganj	Residence & Business structure, Business loss, Agriculture plot	Approved by JVT & PVAT	66	13		02	81	72	07	Not yet started	Resettlement Grant distributed among 10 APs
	Total				**1255**	**1382**	**68**	**15**	**2720**	**2439**	**266**		

2.3.4 Gender and Development

There was some progress made in gender and development during this quarter. The progress report is compiled as per the approved revised GAP which is provided in Appendix F.

2.3.5 Community-based Flood Risk Management (CbFRM)

The CbFRM component is completed. CbFRM component's consultant team (BDPC) submitted their final report on 27th March 2020.

2.3.6 Capacity Building

In this quarter capacity development program was not conducted. Table 2-5 summarises the total number of trainings so far conducted. Due to world-wide travel restrictions associated with the covid 19 pandemic, it is unlikely that the remaining overseas training / study tours can take place before the end of Tranche-1.

Table 2-5 Capacity Building Progress as per RDPP (2nd Revised)

Item	Total	Completed	Pending
A. Local Training	7	6	1
B. Overseas Training/Study Tour	9	6	3

Total	16	12	4

2.3.7 MIS Development Activities

A current summary list of all surveys in the River Survey (2297) and ADCP (259) database is presented in Appendix - H. No additional survey data was added to the database in this quarter.

2.3.8 River Study

The River Stabilization Plan, recommended for approval by the Technical Advisory Committee in February and submitted for final approval by the ISPMC on 15 June 2020 was approved by the Director General on 24 June 2020. The river stabilization plan annexes A, F, H were completed and submitted to PMO on 14 May 2020 letter reference ISPMC-FRERMIP-683. Annex D was submitted on 4th June 2020 letter reference ISPMC-FRERMIP-685. All the 37 Supplementary Annexes (SAs) were finally printed in June and are awaiting shipment after final editing of the approved main report. The individual status of all 37 Supplementary Annexes is available in Appendix-D.

2.3.9 Feasibility Study Design

The Tranche 2 feasibility report was approved on 8th September 2019. In light of further discussion between the PMO and ADB the decision was taken to return to the adaptive approach (from the approved no-regret approach in the feasibility study) as defined in the Framework Financing Agreement, 2014. Together with the appreciation of morphological changes, the approved feasibility report was amended and the ADB processing documents were prepared from April to June, prior to the loan fact finding mission, accordingly. The ISPMC Consultant has prepared Tranche 2 documents for ADB processing, which will be finally confirmed during the loan fact finding mission during the next quarter. In addition, the ISPMC has been asked to prepare an addendum to the feasibility study for Board approval reflecting the outcome of the loan fact finding mission expected in July.

2.3.10 ISPMC Performance Compliance with ToR

So far, the ISPMC has complied with the terms and conditions defined in the Terms of Reference (ToR) of the consultancy contract. Appendix-E presents a detailed summary of the ISPMC performance so far in accordance with the tasks defined in the ToR of the consultancy contract.

3. ADMINISTRATIVE ARRANGEMENTS

3.1 Establishment of Project Offices

The PMO and ISPMC offices were partly operational during the lock-down period. 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 7th floor respectively.

While the PMO and the three SMOs are understaffed, the present staff strength is sufficient to complete the remaining Tranche-1 works. The Tranche 2 preparation would require additional staff in both PMO and SMO's. 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	Currently appointed in the post	Vacant post
Project Director	1	1	0

Superintending Engineer	2	0	2
Executive Engineer	4	1	3
System Analyst	1	0	1
Sub-Divisional Engineer	2	0	2
Assistant Engineer	2	2	0
Assistant Director	1	1	0
Accounts Officer/DD (Accounts)	1	1	0
Accounts Assistant/Sr. Accounts	1	1	0
Data Entry Operator	2	0	2
Driver	2	2	0
Guard	2	0	2
MLSS	4	2	2
Total	**25**	**11**	**14**

Table 3-2 SMO-Koitola Staffing

Post Name	No. of Posts in the approved	Currently appointed in the post	Vacant Post
Executive Engineer	1	1	0
Sub-Divisional Engineer	1	1 (additional charge)	0
Assistant Engineer	1	0	1
Sub-Assistant Engineer	3	3	0
Accounts Assistant	1	0	1
Data Entry Operator	1	0	1
Revenue Surveyor	1	0	1
Work Assistant	3	0	3
Guard	2	0	2
MLSS	1	0	1
Total	**15**	**4**	**10**

Table 3-3 SMO-Tangail Staffing

Post Name	No. of Posts in the approved	Currently appointed in the post	Vacant Post
Executive Engineer	1	1	0
Sub-Divisional Engineer	1	1	0
Assistant Engineer	1	0	1
Sub-Assistant Engineer	2	1	1
Accounts Assistant	1	1	0
Data Entry Operator	1	1	0
Revenue Surveyor	1	0	1
Work Assistant	2	2	0
Guard	1	0	1
MLSS	2	2	0
Total	**13**	**9**	**4**

Table 3-4 SMO-Manikganj Staffing

Post Name	No. of Posts in the approved setup	Currently appointed in the post	Vacant Post
Executive Engineer	1	1	0
Sub-Divisional	2	1	1
Assistant Engineer	1	1	0

Sub-Assistant	3	2	1
Accounts Assistant	1	1	0
Data Entry Operator	1	1	0
Revenue Surveyor	1	1	0
Work Assistant	3	2	1
Guard	1	0	1
MLSS	2	1	1
Total	**16**	**11**	**3**

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.

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.

3.3 Important Events During This Quarter

- The Ministry of Water Resources vide its no. 42.00.00.039.014.01.14 (part-1)-175 dated 29 June 2020 extended the implementation period of Tranche-1 (2nd revised) Project by one year up to 30 June 2021 subject to the following conditions;
    a) Necessary arrangement shall be made for timely completion of all works by June 2021 following the up to date work program
    b) No change can be made in any section/part of the project either physically or financially as a result of the extension of the implementation period
    c) Necessary fund allocation will be ensured to complete all works within the proposed extension period
    d) Flood embankment has to be built following approved project DPP design and its standard qualitatively has to be ensured
    e) Annual Work Plan of the project for 2020-21 will be sent to the Planning Commission by June 2020
    f) As the loan agreement with development partner ends at March 2021, all expenditures under project assistance has to be complete by March 2021
- 30 June 2020: kick-off meeting of the loan fact finding mission. The objective of the mission was to (i) assess project readiness of Project-2 to ensure completion of the works within the multitranche financing facility (MFF) availability period; (ii) discuss all aspects of the project, including rationale, impact, outcome, outputs, implementation arrangements and timelines, design and monitoring framework, procurement plan, staffing, safeguards modalities, gender aspects, Project-1 consultants' contract variations, and cost estimates in order to prepare Project-2 loan documents; and (iii) seek the Government of Bangladesh's concurrence for Project-2 processing. Also, the Mission carried out due diligence on technical, economic, financial, institutional, environmental, and social aspects. Due to the coronavirus disease (COVID-19) pandemic, all meetings were held via video conference facilities. During the mission the achievements of Project-1 were acknowledged not only in terms of constructing innovative infrastructure, but also more globally with respect to the road map (Schedule 1, Framework

Financing Agreement, 2014), which focusses on strategic management of the main rivers in particular and especially on:

a) ***developing more strategic planning and intervention of flood and riverbank erosion management works, in due consideration of the long-term morphological trend of the entire river reaches towards the future long-term stabilization of the entire river course, oppose to the existing ad hoc piecemeal protections*** – substantially achieved with the approved river stabilization plan (including master plan, SESA etc.) and supported through advancements in knowledge-based, designs, construction methods and institutional expansion (office of Chief Engineer, River Management).
b) ***establishing more effective integration of structural and non-structural measures*** – substantially progressed through consolidation and further development of erosion prediction, survey database, MIS, and community-based flood risk management.
c) ***ensuring sustainability of infrastructures and non-structural measures provided*** – reflected in innovative construction methods, the adjustments of the worksites to the prevailing river conditions, and systematic adaptation works in line with the river response to new protective works,
d) ***higher stakeholder participation to achieve the above*** – reflected particularly in the community-based flood risk management activities
e) ***establishing an approach to address uncertainties of unexpected natural disasters, including potential impacts of global climate change*** – reflected particularly in the flexible planning and implementation procedures of the adaptive approach and the consideration of climate change impacts on future water levels for new designs.
f) ***strategic institutional capacity strengthening to address these issues*** – reflected in the implementation of the office of the Chief Engineer, River Management and capacity development on multiple levels.

4. FINANCIAL ARRANGEMENTS

4.1 Statements of Expenditure

Using the project implementation database, and with help from the PMO- FRERMIP, the ISPMC generate reports on 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 30 June 2020 for progress, expenses and reimbursements, for all DPP categories. This table also includes the 2019/20 fiscal targets (and fiscal progress) as defined in the provisional RADP (Revised Annual Development Program).

PMO-FRERMIP expenditures by individual contract are provided in Table B-4. Only the total expenditure values are exactly correct. The individual developing values have been calculated using total expenditure values and the percent distribution by financial component.

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

5. ISSUES FOR DISCUSSION AND AGREEMENT

The ISPMC contract has expired on 30 June 2020.

In recent years, river beside Chauhali faces morphological changes and two major erosion occurred during 2018, one at Upstream end and other at downstream end of the permanent protection. For emergency work, geobags stockpile is necessary.

For Emergency repairing/Dumping FRERRMIP provided

- 39,000 nos 250kg geobags to Manikganj Division
- 20600 nos 250kg geobags to Tangail Division

Tangail O&M division 1,01,617 nos C.C blocks which were saved from the FRERMIP RBP works ad are presently stockpile for emergency work.

6. REFERENCES

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BWDB 2015: Contract for Consultancy Services (Time Based) for Institutional Strengthening and Project Management Consultant (ISPMC) between Bangladesh Water Development Board and Northwest Hydraulic Consultants Ltd. Joint Venture with Euroconsult Mott Macdonald, September 2015

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ISPMC, 2016: Flood and Riverbank Erosion Risk Management Investment Program (FRERMIP) Project-1, Inception Report, 2016 March

NHC, 2013: Project Preparatory Technical Assistance 8054 BAN, Main River Flood and Bank Erosion Risk Management Program, Main Report, 2013 December

Appendices

Appendix-A Work Program Summaries

Table A-1 Project Program Summary

Component	Asset Type	Units	Quantity (Units) BWDB	DDM	MAN	KOI	TAN	Totals
A: Civil Works								
A1: Embankment & Regulator Works	New: Embank	km	0.0	0.0	0.0	12.5	0.0	**12.5**
	Cons/ReCon: Embank	km	0.0	0.0	0.0	8.8	0.0	**8.8**
	New: Insp.Banglow	BDTM	0.0	0.0	7.8	0.0	0.0	**7.8**
	New: Regulator	Nos.	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	0.0	0.0	0.0	0.0	67.0	**67.0**
A4: Pilot Land Recovery	New: RivTrnWrk	BDTM	330.0	0.0	0.0	146.0	0.0	**476.0**
B: Materials								
B1: Geotextile, Riverbank Prot.Works	Procure: GeoBag	Mil Nos.	0.0	0.0	3.2	0.0	1.5	**4.6**
B2: Geotextile, Adaptation	Procure: AdpGeoBag	Mil Nos.	0.0	0.0	1.3	0.0	0.0	**1.3**
C: Vehicles & Equipment								
C1: Vehicles/Transport	Procure: Veh/Trans	Nos.	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/NGO Services								
D1: ISPM; Consultant Serv.	Service: 1 Impl.Consult	BDTM	387.0	0.0	0.0	0.0	0.0	**387.0**
	Service: 2 River.Stabil	BDTM	461.0	0.0	0.0	0.0	0.0	**461.0**
	Service: 3 Feasi.Study	BDTM	170.0	0.0	0.0	0.0	0.0	**170.0**
D2: INGO BWDB	Service: Resettle.S	BDTM	16.2	0.0	0.0	0.0	0.0	**16.2**
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 Acquisition	Compensate: Land.Acqu	BDTM	2,083.	0.0	0.0	0.0	0.0	**2,083.0**
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: Honorarium Allowance	Service: Honor.Allow	BDTM	0.8	0.0	0.0	0.0	0.0	**0.8**
G3: Office Opns BWDB	Service: Prog.Mngt	BDTM	32.3	0.0	0.0	0.0	0.0	**32.3**
G4: Office Opns DDM	Service: Prog.Mngt	BDTM	0.0	2.1	0.0	0.0	0.0	**2.1**
G5: BWDB Surveys	Service: Land/Riv.Surv	BDTM	8.0	0.0	0.0	0.0	0.0	**8.0**
X: Misc. Costs								
X1: Misc. Costs	Misc. Costs: CD&VAT	BDTM	12.1	0.0	0.0	0.0	0.0	**12.1**
	Misc. Costs: Service Charge	BDTM	199.2	0.0	0.0	0.0	0.0	**199.2**

Abreviations:
DDM - Department of Disaster Managment
MAN - Manikganj WD Division, BWDB (SMO-FRERMIP)
KOI - Koitola WD Division, BWDB (SMO-FRERMIP)
TAN - Tangail WD Division, BWDB (SMO-FRERMIP)

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

Table A.2 - RDPP estimates of the project according to IMED Report			all values in BDT lacs			
Sl no	Category	GoB fund	Project Aid RPA			Total
			GOB	Special Account	DPA	
	(a) Revenue Cost					
1	Salary & allowances for support staffs	836.60	0.00	0.00	0.00	836.60
2	Honorarium Allowances	8.00	0.00	0.00	0.00	8.00
3	Resettlement Support Program	0.00	0.00	900.00	0.00	900.00
4	BWDB Capacity Development Program	46.13	0.00	722.75	0.00	768.88
5	Implementation Consultant	503.46	0.00	3369.36	0.00	3872.82
6	River Stabilization and Land Recovery	599.60	0.00	4012.71	0.00	4612.31
7	Feasibility Study of Tranche 2/3 Project	220.58	0.00	1476.16	0.00	1696.74
8	Resettlement Implementation Support	22.75	0.00	152.25	0.00	175.00
9	Community based Disaster Management Program (DDM)	65.78	0.00	440.12	0.00	505.90
10	Land/River Survey and Data Processing	10.40	0.00	69.60	0.00	80.00
11	Survey and Inverstigation/Data Processing	37.51	0.00	251.04	0.00	288.55
12	PMO Operational expenses	38.75	0.00	284.18	0.00	322.93
13	PIU-DDM Operational expenses	2.52	0.00	18.48	0.00	21.00
14	ADB loan interest during implmentation and service charge for Netherlands grant	0.00	0.00	0.00	1992.00	1992.00
15	Sub-total Revenue Component of (a)	2392.08	0.00	11696.65	1992.00	16080.73
	(b) Capital Component					
17	CD/VAT	120.74	0.00	0.00	0.00	120.74
18	Construction of Inspection banglow at Manikganj	7.04	0.00	71.17	0.00	78.21
19	Regulator/ Sluice (new construction 4 nos) in JRB subproject area	222.93	0.00	2254.08	0.00	2477.01
20	21.30 km embankment along the Right Bank of Jamuna and left bank of Baral-Hurasagar	859.72	1625.70	7067.00	0.00	9552.42
21	Riverbank Protective Works	2094.24	0.00	27110.10	0.00	29204.34
22	Adaptive Protection and Emergency Works	380.82	0.00	2874.53	0.00	3255.35
23	Land Recovery/ River training pilot works	421.11	0.00	4257.87	0.00	4678.98
24	Transport vehicles	334.11	0.00	15.37	0.00	349.48
25	Computer and office Equipment	2.09	0.00	41.54	0.00	43.63
26	Computer and office Equipment (DDM)	0.25	0.00	4.74	0.00	4.99
27	Survey equipment	3.37	0.00	64.10	0.00	67.47
28	Land acquisition (136.00 ha)	20831.09	0.00	0.00	0.00	20831.09
29	Sub-total revenue component (b)	25277.51	1625.70	43760.50	0.00	70663.71
	Sub total a+b	27669.59	1625.70	55457.15	1992.00	86744.44
30	**Physical contingency ©**	0.00	0.00	0.00	0.00	0.00
31	**Price Contingency (d)**	0.00	0.00	0.00	0.00	0.00
	Grand total (a+b+c+d)	**27669.59**	**1625.70**	**55457.15**	**1992.00**	**86744.44**

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

Component Code	Categories	Total Cost Est	Value of Physical Progress	PMO expenses	Doner Fund Utilization (Figures in million)		
					ADB	GON	Total
1	Works	3609	3222	3507.92	2788.59	401.26	3189.85
2	Materials	1312.8	1312.8	1312.8	1241.66	0	1241.66
3A	Vehicles-BWDB	34.9	34.5	34.94	1.54	0	1.54
3B	Equipment - BWDB	11.1	11.1	11.10	10.56	0	10.56
3C	Equipment - DDM	0.5	0.5	0.50	0.5	0	0.5
4	Resettlement	90	79.2	84.27	84.28	0	84.28
5	Training	76.9	63.8	65.34	60.14	0	60.14
6A	Consulting Services-Project Management BWDB	1018.2	868.2	967.35	125.87	715.95	841.82
6B	Consulting Services-INGO/ Erosion Prediction Services -BWDB	45.1	42.9	42.55	37.07	0	37.07
6C	Consulting Services- Project Management DDM	50.5	37.4	30.00	26.09	0	26.09
7A	Project Management - BWDB	32.29	30.6	36.40	31.95	0	31.95
7B	Project Management - DDM	2.1	1.5	1.61	1.39	0	1.39
8	Service Charge of ADB loan & GoN Grants	199.2	149.4	170.00	0	0	0
9	Unallocated	2191	1775.7	1708.93	0	0	0
	Grand Total	**8674**	**7630**	**7965**	**4409.62**	**1117.21**	**5526.83**

Table A-4 RDPP Categories: Reimbursed Amount by Development Partners

Sl no	Economic Code	Category (a) Revenue Cost	PMO expenses	Reimbursed Amount		
				ADB	GON	Total
1	3111201, 3111301, 3111325, 3111335	Salary for support staffs	**7.56**	0	0	**0**
2	3111332	Honorarium Allowances	**0.80**	0	0	**0**
3	3211103	Resettlement Support Program	**84.27**	84.28	0	**84.28**
4	3231101, 3231201	BWDB Capacity Development Program	**65.34**	60.14	0	**60.14**
5	325701	Implementation Consultant	**386.47**	84	260	**344.47**
6	325701	River Stabilization and Land Recovery	**436.01**	67	310	**377.01**
7	325701	Feasibility Study of Tranche 2/3 Project	**144.87**	30	90	**120**
8	325701	Resettlement Implementation Support	**13.78**	11.97	0	**11.97**
9	325701	Community based Disaster Management Program (DDM)	**30.00**	26.09	0	**26.09**
10	3257104	Land/River Survey and Data Processing	**7.87**	6.9	0	**6.9**
11	3257104	Survey and Investigation/Data Processing	**28.77**	25.1		**25.1**
12	3111302, 3111329, 3111332, 3111338, 3211119, 3211125, 3211128. 3211129, 3241101, 3243101, 3243102, 3255101, 3255105, 3256101, 3258104, 3258107, 3258129, 3258140, 3258129, 3255102, 3255104	PMO operational expenses	**28.51**	24.99	0	**24.99**
13	Same as PMO expenses	PIU-DDM Operational expenses	**1.61**	1.39		**1.39**
14	3221110, 3411101	ADB loan interest during implementation and service charge for Netherlands grant	**170.00**	0		**0**
		Sub-total Revenue Component of (a)	**1404.75**	**421.86**	**660.01**	**1082.34**
		(b) Capital Component				
15	3821104, 3821101	CD/VAT	**0.00**	0	0	**0**
16	4111201	Construction of Inspection Banglow at Manikganj	**7.71**	6.72	0	**6.72**
17	4111307	Regulator/Sluice gate in JRB1 subproject area	**229.77**	197	0	**197**
18	4111321	21.30 km embankment along the Right Bank of Jamuna and left bank of Baral-Hurasagar	**899.40**	830	0	**830**
19	4111321	Riverbank Protective Works	**2920.43**	2711	0	**2711**
20	4111321	Adaptive Protection and Emergency Works	**322.47**	284.66	0	**284.66**
21	4111321	Land Recovery/ River training pilot works	**440.94**	0	401	**401**
22	4112101	Transport vehicles	**34.94**	4.1	0	**4.1**
23	4112202, 4112310, 4113301	Computer and office Equipment	**4.40**	4.2	0	**4.2**
24	4112202, 4112310, 4113301	Computer and office Equipment (DDM)	**0.50**	0.5	0	**0.47**
25	4112304	Survey equipment	**6.70**	6.4	0	**6.4**
26	4141101	Land acquisition (136.00 ha)	**1692.70**	0	0	**0**
		Sub-total revenue component (b)	**6560.01**	**4044.58**	**401**	**4445.55**
		Sub total a+b	**7964.76**	**4466.44**	**1061.01**	**5527.89**
		Physical contingency ©	**0.00**	**0**		**0**
		Price Contingency (d)	**0.00**			**0**
		Grand total (a+b+c+d)	**7964.76**	**4466**	**1061**	**5527**

Table A-5 DPP Categories: Financial and Physical Progress Indicator

Sl no	Economic Code	Category	Budget	Fiscal year 2019/20		Progress up to the month of June 2020	
				Financial	Physical %	Financial	Physical %
		(a) Revenue Cost	RDPP	Provisional Target			
1	3111201, 3111301, 3111325, 3111335	Salary for support staffs	83.66	2.88	94.05	7.57	9.05
2	3111332	Honorarium Allowances	0.80	0.8	100	0.80	100.00
3	3211103	Resettlement Support Program	90.00	9.94	12.48	84.28	100.00
4	3231101, 3231201	BWDB Capacity Development Program	76.89	12.86	16.73	64.16	83.44
5	325701	Implementation Consultant	387.28	10.41	2.69	386.50	100.00
6	325701	River Stabilization and Land Recovery	461.23	174.09	37.75	436.02	97.25
7	325701	Feasibility Study of Tranche 2/3 Project	169.67	45.6	26.87	144.88	97.13
8	325701	Resettlement Implementation Support	17.50	1.50	11	13.78	100.00
9	325701	Community based Disaster Management Program (DDM)	50.54	7.42	40.7	30.00	100.00
10	3257104	Land/River Survey and Data Processing	8	0.40	6.44	7.88	98.06
11	3257104	Survey and Investigation/Data Processing	28.86			28.77	100.00
12	3111302, 3111329, 3111332, 3111338, 3211119, 3211125, 3211128. 3211129, 3241101, 3243101, 3243102, 3255101, 3255105, 3256101, 3258104, 3258107, 3258129, 3258140, 3258129, 3255102, 3255104	PMO operational expenses	32.29	7.43	25.73	28.52	88.31
13	Same as PMO expenses	PIU-DDM Operational expenses	2.40	0.28	26.67	1.61	76.90
14	3221110, 3411101	ADB loan interest during implementation and service charge for Netherlands grant	199.2	29.2	14.66	170.00	85.34
		Sub-total Revenue Component of (a)	1608.07	302.80	24.76	1404.77	91.18
		(b) Capital Component					
15	3821104, 3821101	CD/VAT	12.07	0	100	0	0
16	4111201	Construction of Inspection bungalow at Manikganj	7.82	2.34	22	7.70	100.00
17	4111307	Regulator/Sluice gate in JRB1 subproject area	247.70	35.58	11	229.78	100.00
18	4111321	21.30 km embankment along the Right Bank of Jamuna and left bank of Baral-Hurasagar	955.24	136.94	15	899.41	100.00
19	4111321	Riverbank Protective Works	2920.43	-	-	2920.43	100.00
20	4111321	Adaptive Protection and Emergency Works	325.54	-	-	322.47	100.00
21	4111321	Land Recovery/ River training pilot works	467.90	259.98	35.18	440.95	100.00
22	4112101	Transport vehicles	34.95	-	-	34.95	100.00
23	4112202, 4112310, 4113301	Computer and office Equipment	4.36	-	-	4.36	100.00
24	4112202, 4112310, 4113301	Computer and office Equipment (DDM)	0.50	-	-	0.50	100.00
25	4112304	Survey equipment	6.75	-	-	6.75	100.00
26	4141101	Land acquisition (136.00 ha)	2083.11	219.37	8	1692.71	100.00
27		Sub-total revenue component (b)	7066.37	654.20	2.53	6560.01	100.00
		Sub total a+b	8674.4	957.00	6.28	7964.78	98.42
		Physical contingency ©	0	-	-	0.00	
		Price Contingency (d)	0	-	-	0.00	
		Grand total (a+b+c+d)	8674.44	957.00	6.28	7964.78	98.42

Appendix-B Work Program Details

Table B-1 Design Progress Details

Description	Total	Design Data Collection			Prog (%)		Remarks
		Surv	Hydraul	Geotech	Desn	Dwg	
Component A: Civil Works							
BWDB PMO							
New: RivTrnWrk: 330 BDTM: River Training Pilot Work: & Land Recovery		c	c	na	100	100	Desn. & Dwg. Complete
BWDB PMO Totals	***1***	***1***	***1***	***1***	***1***	***1***	
Koitola SMO							
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. (4 km): Baghabari - Verakhola; km 17.3-21.3		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: 5 km: Embankment (5 km): Kaijuri - Bhatpara; km 0-5		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 Nos.: Kaijuri Reg 2V 1.5x1.8m: Koijuri		c	c	c	100	100	Desn. & Dwg. Complete
New: Regulator: 1 Nos.: Rohindakandi Reg 2V 1.5x1.8m: Ruhindakandi		c	c	c	100	100	Desn. & Dwg. Complete
New: Regulator: 1 Nos.: Verakhola Reg 2V 1.5x1.8m: Verakhola		c	c	c	100	100	Desn. & Dwg. Complete
New: Regulator: 1 Nos.: Andhar Manik Reg 4V 1.5x1.8m: Andharmanik		c	c	c	100	100	Desn. & Dwg. Complete
New: RivTrnWrk: 146 BDTM: Piloting Work; Jute Mattress: Shahzadpur		c	c	c	100	100	Dwgs Complete
Koitola SMO Totals	***10***	***10***	***10***	***10***	***10***	***10***	
Manikganj SMO							
New: Insp.Banglow: 7.8 BDTM: Construction of Inspection Banglow		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
Manikganj SMO Totals	***4***	***4***	***4***	***4***	***4***	***4***	
Tangail SMO							
New: Revetment: 2.5 km: Revetment (2.5 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
Emerg: AdpRivProt: 67 BDTM: Emergency/Adaptive 1: Riverbank Protection		c	c	na	100	100	Desn. & Dwg. Complete
Tangail SMO Totals	***3***	***3***	***3***	***3***	***3***	***3***	
Component Totals	***18***	**18**	**18**	**18**	**18**	**18**	

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

Table B-2 Tender Progress Details

Project Code	Description	Dates												
		ISPMC ToR	ADB ToR	EoI Notice	EoI Received	BWDB EoI Eval	ADB EoI Eval	ADB Bid Doc	Tender Notice	Tender Received	Eval Comp	ADB Consur	Appr. Compl, Authority	Notif. Award
Goods; B: Materials														
G-01	Supply of Geobags; Chauhali &Sirajganj							26Dec14	31Dec14	19Feb15	04Aug15	29Apr15	07Jan15	01Jul15
G-02	Supply of Geobags; Zaffarganj, Harirampur & Manikganj							26Dec14	31Dec14	19Feb15	04Aug15	29Apr15	07Jan15	01Jul15
G-03	Supply of Geobags; Harirampur & Manikganj							19May15	19May15	06Jul15	08Dec15	27Aug15	22Sep15	27Sep15
G-04	Supply of Geobags; Chauhali, Harirampur, Koijuri & Benotia							13Sep16	27Sep16	14Nov16	19Dec16	20Jan17	31Jan17	12Feb17
Component Totals		*0*	*0*	*0*	*0*	*0*	*0*	*4*	*4*	*4*	*4*	*4*	*4*	*4*
Goods;	**C: Vehicles & Equipment**													
G-05	2016 Supply of Jeep;							26Feb16	29Feb16	31Mar16	13Apr16	19Apr16	19Apr16	07Jun16
G-06.1	2015 Supply of Jeeps;								01Jun16	05Jun16	09Jun16	12Jun16	16Jun16	30Jun16
G-06.2	2016 Supply of Jeep;								10Mar16	24Mar16	14Apr16	21Apr16	28Apr16	05May16
G-06.3	2016 Supply of Motorcycles;								10Mar16	24Mar16	14Apr16	21Apr16	28Apr16	05May16
G-07.1	2015 Office Equipment; BWDB PMO								13Apr15	17May15				28May15
G-07.2	2016 Office Equipment; BWDB PMO							10Apr15	03Jan16	04Feb16	29Feb16	28Mar16	28Mar16	30Mar16
G-08	2016 Supply of Survey Equipments;							10Apr15	03Jan16	04Feb16	29Feb16	14Mar16	14Mar16	16Mar16
G-09	2017 Supply of Office Equip; DDM								01Jun17	08Jun17	08Jun17	15Jun17	22Jun17	22Jun17
Component Totals		*0*	*0*	*0*	*0*	*0*	*0*	*3*	*8*	*8*	*7*	*7*	*7*	*8*
Services; D: Consulting/NGO Services														
S-01	ISPMC;			23Oct14	15Dec14				01Apr15	01Jun15				08Sep15
S-02	Resettlement Impl.Support; Sirajganj, Tangail, Manikganj		22Apr15	09Jun15	09Jul15	24Aug15		22Oct15	11Nov15	10Dec15	11Jan16	04Mar16	15Mar16	16Mar16
S-04	Community Based Flood Risk Mngmt; DDM	30Sep15	01Mar16	28Mar16	26Apr16	27Mar17	23Oct17	23Oct17	12Nov17	17Dec17	05Aug18	28Aug18		30Aug18
S-06.1	2015 Erosion & Morphological Chg;								23Dec14	01Jan15				29Jan15
S-06.2	2016, 2017 & 2018 Erosion Prediction;		23Feb16						23Feb16	15Mar16	24Mar16	28Mar16	09May16	10May16
Component Totals		*1*	*3*	*3*	*3*	*2*	*1*	*2*	*5*	*5*	*3*	*3*	*3*	*5*
Works; A: Civil Works														
W-01	Embankment, & 2 Reg.; km 0-5							06Nov17	07Nov17	11Dec17	27Dec17	21Jan18	12Feb18	12Feb18
W-02	Embankment; km 5-8.5							06Nov17	07Nov17	11Dec17	27Dec17	21Jan18	23Jan18	29Jan18
W-03	Embankment; 8.5-12.5							06Nov17	07Nov17	11Dec17	27Dec17	21Jan18	23Jan18	29Jan18
W-04	Embankment & 1 Regulator; km 12.5-17.3							06Nov17	07Nov17	11Dec17	27Dec17	21Jan18	12Feb18	12Feb18
W-05	Embankment & 1 Regulator; km 17.3-21.3							06Nov17	07Nov17	11Dec17	27Dec17	29Jan18	20Feb18	22Feb18
W-06	Revetment; Jamuna at Chauhali, R1; km 0-2.5							30Mar15	04May15	08Jun15	28Jul15	14Aug15	22Sep15	23Sep15
W-07	Revetment; Jamuna at Chauhali, R2; km 2.5-7.0							30Mar15	04May15	08Jun15	28Jul15	14Aug15	22Sep15	23Sep15
W-08	Revetment; Jamuna at Zaffarganj, km 6.1-8.1							11May15	22Jun15	27Jul15	08Oct15	04Dec15	03Feb16	03Feb16
W-09	Revetment; Padma at Harirampur, R1; km 6.7-10.2							11May15	22Jun15	27Jul15	04Nov15	10Dec15	30Dec15	30Dec15
W-10	Revetment; Padma at Harirampur, R2; km 3.2-6.7							11May15	22Jun15	27Jul15	04Nov15	10Dec15	30Dec15	30Dec15
W-11	Emergency/Adaptive 1; Riverbank Protection							31Dec17	14Jan18	15Feb18	25Feb18	01Mar18	14Mar18	19Mar18
W-14	Piloting Work; Manikganj, Tangail, Sirajganj	04Oct17						21May18	21May18	25Jun18	28Jun18	30Jul18	29Aug18	30Aug18
W-15	Construction of Inspection Banglow; Manikgonj		05Apr18					15Apr18	15Apr18	17May18	29May18	07Jun18	11Jun18	11Jun18
W-16	Piloting Work; Shahzadpur							1Aug19	1Aug19	22Aug19		09Sep19	11Sep19	11Sep19
Component Totals		*1*	*1*	*0*	*0*	*0*	*0*	*13*	*13*	*13*	*13*	*13*	*13*	*13*
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**

Table B3 ADB & GON Disbursement Details (until 30 June)

ADB Disbursements
ADB Loan Account

Appl. No	Date	US$	Rate	BDT
WL001	09/Dec/2014	3,682,433.00	77.85	286,677,409.05
Wl007	17/Dec/2015	11,069,711.01	78.70	871,186,256.49
BW006	15/10/2015	-	77.80	-
BW008	20/Dec/2015	1,198,478.59	78.70	94,320,265.03
BW013	30/Jun/2016	3,889,762.94	78.40	304,957,414.50
BW011	02/Oct/2016	1,627,548.73	78.40	127,599,820.43
BW017	27/Nov/2016	3,567,316.77	78.65	280,569,463.96
BW018	04/May/2017	10,263.46	78.40	804,655.17
BW020	02/May/2017	6,561,484.21	78.84	517,302,907.94
BW023	22/Jun/2017	1,746,397.55	78.84	137,685,982.91
BW029	06/Nov/2017	4,715,885.93	80.51	379,675,976.22
BW030	22/12/2017	1,148,309.32	80.51	92,450,383.35
BW034	12/Sep/2018	1,708,882.48	80.85	138,163,148.51
BW037	05/Dec/2018	3,546,512.56	80.85	286,735,541.67
BW042	19/02/2019	510,691.02	78.22	39,946,120.74
BW044	08/May/2019			
		44,983,677.57		**3,558,075,345.97**

Grant Imprest Account

Appl. No	Date	US$	Rate	BDT
WG001	09/Dec/2014	1,189,354.00	77.85	92,591,208.90
WG007	17/Dec/2015	20,651.00	78.70	1,625,233.70
WG008	04/Oct/2016	319,995.00	78.40	25,087,608.00
ED002	24/Nov/2016	43,392.97	78.63	3,411,989.23
ED006	24/Nov/2016	341,134.29	78.63	26,823,389.22
ED007	04/May/2017	58,422.77	78.40	4,580,345.17
ED008	02/May/2017	349,549.87	78.77	27,532,857.98
ED011	22/Jun/2017	160,051.52	78.84	12,618,462.00
ED015	10/Nov/2017	435,718.95	80.66	35,145,343.16
ED016	22/12/2017	218,279.52	80.85	17,647,898.88
ED019	08/Aug/2018	163,006.74	80.85	13,179,094.93
ED021	10/Oct/2018	164,795.19	80.85	13,323,691.11
ED024	19/12/2018	656,219.52	83.07	54,511,119.84
ED027	24/05/2019	1,090,542.52	83.95	91,549,128.14
ED030	11/Sep/2019	805,534.72	84.35	67,950,398.37
ED031	18/Nov/2019	833,894.02	84.63	70,571,212.35
ED035	06/May/2020		84.78	
ED039	21/May/2020		84.23	
		6,850,542.60		**558,148,980.98**

Reimbursement

Dir.Pay			ADB & GoN	
Appl. No.	**Date**	**Category**	**US$**	**(BDT)**
BW002	22-Sep-15	2	355,601.99	27,665,834.82

BW003	22-Sep-15	2	460,512.90	35,827,903.62
BW009/BW010	23/Feb/2016	6A	204,145.03	15,836,549.00
BW012/ED003	20/Mar/2016	6A	302,978.63	23,502,278.31
BW014	23/Jun/2016	5	95,517.43	7,488,568.00
BW015/ED004	29/Jun/2016	6A	374,095.68	29,020,474.00
BW016/ED005	29/Jun/2016	6A	306,511.80	23,777,655.00
BW019	20/Jan/2017	5	19,044.49	1,503,562.49
BW021/ED009	10/Mar/2017	6A	410,183.52	31,819,986.56
BW022/ED010	06/Apr/2017	6A	689,643.40	53,499,086.76
BW024	06/Jun/2017	5	92,992.63	7,497,995.76
BW025/ED012	07/Jun/2017	6A	290,619.58	22,544,813.92
BW026/ED013	22/Jun/2017	6A	199,294.74	15,460,289.46
BW027/ED014	06/Jul/2017	6A	74,842.50	5,805,906.94
BW028	06/Jul/2017	5	94,000.00	7,520,000.00
BW031/ED017	12/Jan/2018	6A	110,259.49	8,553,379.94
BW032	01/Feb/2018	5	52,910.72	4,232,857.60
BW033/ED018	26/Mar/2018	6A	485,342.86	37,650,472.36
BW035/ED020	08/Jun/2018	6A	409,309.28	31,752,167.40
BW036	18/Jul/2018	5	37,601.41	3,083,315.62
BW038	12/Oct/2018	5	15,246.33	1,250,199.06
BW039	17/Oct/2018	5	35,231.39	2,888,973.98
BW040/ED022	14/Nov/2018	6A	408,412.59	31,682,606.67
BW041/ED023	21/Nov/2018	6A	495,612.85	38,447,166.84
BW043	04/Jan/2019	5	23,358.81	1,915,422.42
BW045/ED026	30/May/2019	6A	220,448.22	17,101,270.67
BW046	05/Jul/2019	5	23,404.70	1,977,697.15
BW047/ED028	30/Jun/2019	6A	414,965.46	32,190,945.56
BW048/ED029	18/Jul/2019	6A	109,534.20	8,497,115.57
ED032	16/Jan/2020	6A	171,297.78	13,288,425.28
ED033	13/Jan/2020	6A	186,345.28	14,455,735.10
ED034	03/Feb/2020	6A	239,332.91	18,566,250.49
ED037	18/Mar/2020	1	256,858.32	21,789,291.61
ED038	16/Mar/2020	6A	190,992.25	14,816,223.79
ED040	27/May/2020	1	53,191.37	4,518,341.11
ED041	27/May/2020	1	358,843.07	30,481,925.11
ED042	23/Jun/2020	6A	466,595.34	36,196,133.50
ED042	28/Jun/2020	6A	89,693.60	7,614,088.92
BW001 (LC)	30/Oct/2017	2	8,687,839.83	675,998,236.41
Capitalization			1,967,101.84	161,302,350.88
Sub Totals			19,479,714.22	1,529,021,497.66
Grand Total			71,313,934.39	5,645,245,824.62

Appendix-C

Table C-1 Utilization of Consultant Person-Months

No.	Position	Firm	Name	Person-Months - updated for month of June' 2020							
				VO-5	Jan' 20	Feb' 20	Mar' 20	Apr' 20	May' 20	Jun' 20	Used
	MAIN TEAM - INTERNATIONAL										
I-1	Team Leader / River Mangement Specialist	NHC	Knut Oberhagemann	**39.30**	0.92	0.70	0.93			0.77	39.71
I-2	Institutional Development Specialist	EMM	Robert A. van de Putte	**2.51**							2.51
I-3	Morphologist	DELTARES	Erik Mosselman	**4.96**	0.00	0.02	0.04	0.01			4.96
I-4	River Engineer	NHC	Bruce Walsh	**5.85**		0.16		0.09			5.53
I-5	Construction / Quality Control Engineer	EMM	Basistha Adhikari	**0.87**							0.87
I-6	Flood Risk Management Specialist	NHC	Dave Burkholder	**11.30**							11.30
I-7	Social Development / Resettlement Specialist	EMM	Jean Louis Leterme	**10.52**							10.52
I-8	Economist	NHC	John D. M. Roe	**3.02**	0.50			0.14	0.06		2.62
	CRVA (Climate Risk and Vulnerability Assessment)										0.45
I-9	Financial Management Specialist	EMM	J. Spurr	0.00							0.00
I-10	Hydrologist	NHC	Derek Stuart	7.91			0.001	0.004	0.013		7.92
I-11	Environmental Specialist	EMM	Mr.Wim Giesen	4.81		0.30	0.43	0.26	0.07	0.23	4.81
I-12	Information and Data Management Specialist	NHC	Dave Burkholder	8.77	0.05	0.02	0.28	0.11	0.05		8.57
l-13	Unallocated Engineering Services	NHC	TBA (see I-13-1 to 5 & I-16)								0.00
I-13-1	Int'l Construction Advisor-Engineer	NHC	Graeme Vass	**3.00**							3.00
I-13-2	River Engineer	NHC	Jesper Mathiesen	**23.12**	0.17	0.36	0.53	0.87	1.00	0.73	23.49
	CRVA (Climate Risk and Vulnerability Assessment)										0.36
I-13-3b	Geotextile Specialist (Unallocated)	NHC	Michael Heibaum	**0.65**							0.65
I-13-3	Numerical Modeller	NHC	Angela Thompson	**13.00**	0.05		0.11	0.70	0.73	0.23	13.15
I-13-4	Unallocated Engineering Services	NHC	Seth Bryant	**3.95**							3.95
I-13-5	Unallocated Engineering Services	NHC	TBN/Brecht D'Haeyer	**2.55**							2.55
I-13-6	**Unallocated Engineering Services**	**NHC**	**Yannik Gunther**	**1.22**			0.30				2.07
I-16	Geotechnical/Construction Engineer	EMM	Hiba Khan	**18.77**	0.95	0.94	0.90	0.97	1.00	0.55	18.32
I-14	Senior Geotechnical Engineer	NHC	Dr. Horst Kramer	1.04							1.04
I-15	River Engineer	NHC	Brad Hall	6.48							6.48
I-17	Water Resouurces Specialist	EMM	Marieke Niewaal	0.00							0.00
I-13	Design and Specification Engineer	EMM	John Prytherch	3.65			0.04	0.11	0.32	0.06	3.64
I-18	Loan Documents Specialist	EMM	Ahbar Choudhury	0.22					0.02	0.20	0.22
I-19	Geotecnical Engineer	EMM	James Gelder	0.19		0.01	0.03	0.01	0.14		0.19

			Totals	**177.66**	**2.64**	**2.51**	**3.59**	**3.27**	**3.40**	**2.77**	**178.89**

RIVER STUDY TEAM - INTERNATIONAL											
IR-1	Task Leader / Flood & River Management Spec.	NHC	Carsten Staub	11.01							10.98
IR-2	Institutional Development Specialist	EMM	Robert A. van de Putte	0.50							0.50
IR-3	Morphologist	DELTARES	Sanjay Giri	6.47	0.05				0.23		6.45
IR-4	River Engineer (River Training)	NHC	Gerritt Klaassen	11.50	0.51	0.49	0.17				11.50
IR-5	Water Resources Management Specialist	DELTARES	W. J. Oliemans	2.93		0.07					2.91
IR-6	Economist	EMM	Alexander Mueller/**John D.M. Roe**	2.47							2.47
	CRVA (Climate Risk and Vulnerability Assessment)										0.00
IR-7	Social / Regional Development Specialist	NHC	Mark Hopkins	6.15							6.15
IR-8	Environmental Specialist	EMM	Wandert Benthem	4.01							4.01
IR-9	Hydrologist	NHC	Malcolm Leytham	2.95							2.95
	CRVA (Climate Risk and Vulnerability Assessment)			0.7							0.73
IR-10	Climate Change Specialist	NHC	Mariza Coba Cabralle	1.98							1.98
	CRVA (Climate Risk and Vulnerability Assessment)			0.07							0.07
IR-11	Dredging Specialist	NHC	Andrew Kirby	2.41					0.30		2.41
IR-12	Urban & Master Planner	NHC	Dr. Douglas Webster	2.91				0.09			2.91
IR-13	Morphologist Modeller	DRS	Mohammed Yossef	1.61				0.23			1.61
IR-14	Sedimentologist	NHC	Dan Haught	1.42							1.42
IR-15	Geomorphologist	NHC	Andrew Nelson	1.65							1.65
IR-16	Community Development/ Flood Management Specialist	EMM	Judith de Bruijne	0.18							0.18
IR-17	Report Editor	NHC	Dr.Sara Bennett,	0.78					0.23		0.76
IR-18	Report Publisher	NHC	Sabrina Asche	8.70		0.14	0.50	1.00	1.00		8.79
			Totals	**70.43**	**0.56**	**0.70**	**0.67**	**1.32**	**1.76**	**0.00**	**70.43**
			Grand Total International		**3.20**	**3.21**	**4.26**	**4.59**	**5.16**	**2.77**	**249.32**

Table C-1 Utilization of Consultant Person-Months

No.	**Position**	**Firm**	**Name**	**Person-Months - updated for month of June - 2020**							
				VO-5	**Jan' 20**	**Feb' 20**	**Mar' 20**	**Apr' 20**	**May' 20**	**Jun' 20**	**Used**
	MAIN TEAM - INTERNATIONAL										
I-1	Team Leader / River Mangement Specialist	NHC	Knut Oberhagemann	39.30	0.92	0.70	0.93			0.77	39.71
I-2	Institutional Development Specialist/	EMM	Robert A. van de Putte	2.51							2.51
I-3	Morphologist	DELTARES	Erik Mosselman	4.96	0.00	0.02	0.04	0.01			4.96

I-4	River Engineer	NHC	Bruce Walsh	5.85		0.16		0.09			5.53
I-5	Construction / Quality Control Engineer	EMM	Basistha Adhikari	0.87							0.87
I-6	Flood Risk Management Specialist	NHC	Dave Burkholder	11.30							11.30
I-7	Social Development / Resettlement Specialist	EMM	Jean Louis Leterme	10.52							10.52
I-8	Economist	NHC	John D. M. Roe	3.02	0.50			0.14	0.06		2.62
	CRVA (Climate Risk and Vulnerability Assessment)										0.45
I-9	Financial Management Specialist	EMM	J. Spurr	0.00							0.00
I-10	Hydrologist	NHC	Derek Stuart	7.91				0.004	0.013		7.92
I-11	Environmental Specialist	EMM	Mr.Wim Giesen	4.81		0.30	0.43	0.26	0.07	0.23	4.81
I-12	Information and Data Management Specialist	NHC	Dave Burkholder	8.77	0.05	0.02	0.28	0.11	0.05		8.57
I-13	Unallocated Engineering Services	NHC	TBN								0.00
I-13-1	Int'l Construction Advisor-Engineer	NHC	Graeme Vass	**3.00**							3.00
I-13-2	Junior Engineer	NHC	Jesper Mathiesen	**23.44**	0.17	0.36	0.53	0.87	1.00	0.73	23.49
	CRVA (Climate Risk and Vulnerability Assessment)										0.36
I-13-3b	Geotextile Specialist (Unallocated)	NHC	Michael Heibaum	**0.65**							0.65
I-13-3	Numerical Modeller	NHC	Angela Thompson	**13.13**	0.05		0.11	0.70	0.73	0.23	13.15
I-13-4	Unallocated Engineering Services	NHC	Seth Bryant	**3.95**							3.95
I-13-5	Unallocated Engineering Services	NHC	TBN/Brecht D'Haeyer	**2.55**							2.55
I-13-6	**Unallocated Engineering Services**	**NHC**	**Yannik Gunther**	**1.22**							1.77
I-16	Geotechnical/Construction Engineer	EMM	Hiba Khan	**18.32**	0.95	0.94	0.90	0.97	1.00	0.55	18.32
I-14	Senior Geotechnical Engineer	NHC	Dr. Horst Kramer	1.04							1.04
I-15	River Engineer	NHC	Brad Hall	6.48							6.48
I-17	Water Resouurces Specialist	NHC	Marieke Niewaal	0.00							0.00
I-13	Design and Specification Engineer	EMM	John Prytherch	3.65			0.04	0.11	0.32	0.06	3.64
	Loan Documents Specialist	EMM	Ahbar Choudhury	0.22					0.02	0.20	0.22
I-18	Geotecnical Engineer	EMM	James Gelder	0.19		0.01	0.03	0.01	0.14		0.19
			Totals	177.66	**2.64**	**2.51**	**3.29**	**3.27**	**3.40**	**2.77**	**178.89**
	Main Team National										
N-1	DTL / Flood & Erosion Risk Management Spec.	EMM	Sharif Al Kamal	48.22	0.23	0.91	0.91	0.91	0.91	1.00	48.77
N-2	Institutional / Capacity Development Specialist	RPMC	Dr. M. A. Qassem	9.86							9.86
N-3	River Engineer (Morphologist)	CEGIS	Dr. Maminul Haque Sarker	7.10							7.00
N-4	Community-based Flood Risk Mngt. Spec.	RPMC	Quazi Towfique Islam	37.5				0.09	0.45		37.81
N-5	Resettlement Specialist	EMM	Shireen Akhter/**Begum S. Nahar**	19.00			0.66	0.91	0.50	0.48	19.00
N-6	Project Economist	RPMC	Amiul Islam	10.96		0.91	0.41	0.18	0.14	0.18	10.96

N-7	Procurement Specialist	RPMC	A. Abdullah Chowdhury / **Md Abdullah Sadeque**	1.89							1.89
N-8	Construction Engineer	RPMC	Mirza Harunar Rashid	34.94							34.94
	Resettlement Advisor	EMM	Monzurul Hoq	1.75		0.23	0.50	0.27			1.00
N-9	Financial Management Specialist	EMM	Md. Habibur Rahman/**Ektedar Rahman**	12.31	0.50	0.32	0.05	0.23	0.23	0.27	12.31
N-10-1	River Engineer Flood Management Infr.- 1	RPMC	Mukhles uz zaman	13.74							13.74
N-10-2	River Engineer Flood Management Infr. -2	RPMC	Saleh Abib Turash	19.50					0.52	1.00	19.53
N-11	Social Development and Gender Specialist	EMM	Ruh Afza Ruhi/**Begum S. Nahar**	9.36							9.36
N-12	Environment Specialist	RPMC	Dr. Md. Nurul Islam/**Md. Amir Faisal**	17.25				0.45			17.24
N-13	Training Coordinator	EMM	Jahangir Kabir/ **Shameem Ahmed**	19.3							19.29
N-14	Information and Data Management Specialist	EMM	Asrafuzzamen	0.00							0.00
N-15	Hydraulic Structural Engineer	RPMC	Md. Dabir Uddin/**Aminul Haque Shah**	3.02							3.02
N-16	Road Engineer	RPMC	Zakir Hossain	4.21							4.21
N-17	Geotechnical Engineer / **Geotecnical Expert (Local)**	EMM	Md. Korban Ali / **Md. Shamsul Islam**	8.33							8.08
N-18-1	Site Engineer 1 (PRB-1)	RPMC	Md. Nurul Amin	40.88							40.88
N-18-2	Site Engineer 2 (JLB-2 Chauhali)	RPMC	KM Nazmul Haque/ **Ekram Sarder/Mainul Islam**	14.24							14.24
N-18-3	Site Engineer 3 (JLB-2 Zaffarganj)	EMM	Md Faridul Alam/Moin Uddin/ AZM Abdullah/Ziaul Alam	39.70	0.58	1.00	1.00	1.00	0.82	0.32	39.70
N-18-4	Site Engineers 4 (PLB-1 Harirampur)	EMM	Abdul Jalil/**Saiful Islam**	8.04							8.04
N-19	Surveyor	EMM	Osman Ghani	13.07							13.07
N-20	Unallocated Engineering Services	EMM	TBN Mukhles uz zaman	1.00							1.00
N-21	Morphologist	CEGIS	Sudipta Kumar Hore	5.22			0.04	0.10		0.08	5.22
			Totals	400.38	**1.31**	**3.37**	**3.57**	**4.14**	**3.57**	**3.33**	**400.16**

Table C-1 Utilization of Consultant Person-Months continued ...

	RIVER STUDY TEAM - INTERNATIONAL										
IR-1	Task Leader / Flood & River Management Spec.	NHC	Carsten Stuab	11.01							10.98

IR-2	Institutional Development Specialist/**Capacity Development Specialist.**	EMM	Robert A. van de Putte	0.50							0.50
IR-3	Morphologist	DELTARES	Sanjay Giri	6.47	0.05				0.23		6.45
IR-4	River Engineer (River Training)	NHC	Gerritt Klaassen	11.50	0.51	0.49	0.17				11.50
IR-5	Water Resources Management Specialist	DELTARES	W. J. Oliemans	2.93		0.07					2.91
IR-6	Economist	EMM	Alexander Mueller/**John D.M. Roe**	2.47							2.47
	CRVA (Climate Risk and Vulnerability Assessment)										0.00
IR-7	Social / Regional Development Specialist	NHC	Mark Hopkins	6.15							6.15
IR-8	Environmental Specialist	EMM	Wandert Benthem	4.01							4.01
IR-9	Hydrologist	NHC	Malcolm Leytham	3.68							2.95
	CRVA (Climate Risk and Vulnerability Assessment)										0.73
IR-10	Climate Change Specialist	NHC	Mariza Costa-Cabral	2.05							1.98
	CRVA (Climate Risk and Vulnerability Assessment)										0.07
IR-11	Dredging Specialist	NHC	Andrew Kirby	2.41					0.30		2.41
IR-12	Urban & Master Planner	NHC	Dr. Douglas Webster	2.91				0.09			2.91
IR-13	Morphologist Modeller	DRS	Mohammed Yossef	1.61				0.23			1.61
IR-1	Sedimentologist	NHC	Dan Haught	1.42							1.42
IR-2	Geomorphologist	NHC	Andrew Nelson	1.65							1.65
IR-3	Community Development/ Flood Management Specialist	EMM	Judith de Bruijne	0.18							0.18
IR-4	Report Editor	NHC	Dr.Sara Bennett,	0.78					0.23		0.76
IR-5	Report Publisher	NHC	Sabrina Asche	8.70		0.14	0.50	1.00	1.00		8.79
			Totals	70.43	**0.56**	**0.70**	**0.67**	**1.32**	**1.76**	**0.00**	**70.43**
			Grand Total International	248.1	**3.20**	**3.21**	**3.96**	**4.59**	**5.16**	**2.77**	**249.32**
	RIVER STUDY TEAM - NATIONAL										
NR-1	Water Resources Management Specialist	RPMC	G M Akram Hossain	9.92							9.92
NR-2	Flood Management Specialist	RPMC	Md. Makbul Hossain	7.55							7.55
NR-3	River Engineer (Morphologist)	CEGIS	Dr. Maminul Haque Sarker	4.00							4.00
NR-4	Economist	EMM	Dr. Shaker Ahmed	0.00							0.00
NR-5	Regional / Spatial Planner	RPMC	Dr. Shamim M Haque	3.37							3.37
NR-6	Institutional Development Specialist	RPMC	Dr. M. A. Qassem	3.94							3.94
NR-7	River Engineer	RPMC	Md. Motiur Rahman Jewel	11.7							11.70
NR-8	Hydrologist	EMM	Imdadul Haque Siddiqui	0.00							0.00
NR-9	Social Development and Gender Specialist	EMM	**Shamsun Nahar**	4.00							3.99
NR-10	Environment / Climate Change Specialist	EMM	**Amir Faisal**	2.50							2.49

NR-11	Water Supply and Water Quality Specialist	EMM	**Dr. Khairul Bashar**	3.63							3.63
NR-12	Agriculture Specialist	RPMC	Dr Quazi Reasul Islam	3.34							3.34
NR-13	Fishery Specialist	RPMC	Dr. Md. S. Howlader	9.00	0.32	0.07	0.09	0.20			9.00
NR-14	Environmental Avisor	EMM	Dr. Alnun Nishat	0.18							0.18
			Totals	**63.14**	**0.32**	**0.07**	**0.09**	**0.20**			**63.12**
			Grand Total National	**463.52**	**1.6**	**3.4**	**3.7**	**4.3**	**3.6**	**3.3**	**463.28**

Flood & Riverbank Erosion Risk Management Investment Program (FRERMIP)

Time Sheet (Man-Month) Summary as of November 2015 to June 2020

No.	Position	Firm	Name	Man-month									
				Vo-5	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20	Apr'20	May'20	Jun'20	Used
	Reimbursable												
	TECHNICAL SUPPORT STAFF												
TS-4	Junior Engineer - 1	RPMC	Soelem Aafnan Bhuiyan	**33.35**									32.35
TS-2	Junior Engineer - 2	RPMC	**Saleh Adib Turash**	**53.86**	1.00	1.00	1.00	1.00	1.00	1.00			53.86
TS-6	Junior Engineer - 3	EMM	Shohely Sultana / Jinat Najnin	**24.63**		0.82	1.00	1.00	1.00	1.00	1.00	1.00	25.13
TS-3	GIS Specialist	RPMC	Hamida Khatun Popy	**42.54**									42.54
TS-5	GIS Specialist -2	EMM	Faisal Mahmood	**23.00**									23.00
TS-1	AutoCAD Technician	RPMC	Md. Mostafizur Rahamn	**41.23**				0.36	0.68	0.64	0.59		41.14
													0.00
													0.00
			Totals	**218.61**	**1.00**	**1.82**	**2.00**	**2.36**	**2.68**	**2.64**	**1.59**	**1.00**	**218.02**
	NON-TECHNICAL SUPPORT STAFF												0.00
1	Account's Officer	EMM	Malay kumar Sen	**54.50**	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	55.00
2	Office Manager	EMM	Sonia Rahman	**56.68**	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	57.18
3	Office Secretary	EMM	Masud Parvez	**57.09**	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	57.59
4	Office Assistant	EMM	Nue A Alam and Bellel	**60.00**	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	57.00
5	Account's Assistance	EMM	MD.Lutfur Rahman Khan	**35.50**	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	36.00
		EMM											0.00
			Totals	**263.77**	**5.00**	**5.00**	**5.00**	**5.00**	**5.00**	**5.00**	**5.00**	**5.00**	**262.77**
			Grand Total	**482.38**	**6.00**	**6.82**	**7.00**	**7.36**	**7.68**	**7.64**	**6.59**	**6.00**	**480.79**

Appendix-D

Table D-1 Status of River Study Technical Notes

New Number	Title	Main Author(s)	Review/Approval	A Background information & Morphology	B Morphology - General	C Morphology - Bifurcations & Offtakes	D River Engineering	E Flood Risk Management	F River Stabilization Impacts	G Water Resources Management	H Land Use & Economic Benefits	Status
A1	Strategic Framework for River Stabilization & Development	DW	KO	x								Finally Printed. (14 May 2020, ISPMC-FRERMIP-683)
A2	Preliminary Regional Master Plan for the North-Central Zone	DW	KO	x								Finally Printed. (14 May 2020, ISPMC-FRERMIP-683)
A3	Strategic-Environmental and Social Assessment of River	WB	NCEA	x								Finally Printed. (14 May 2020, ISPMC-FRERMIP-683)
A4	Inland Navigation and Dredging	HK	KO	x								Finally Printed. (14 May 2020, ISPMC-FRERMIP-683)
B1	Holistic river morphology analysis for the Brahmaputra river system	MHS	CS/EM		x							Finally Printed. (22 Sep 2019 ISPMC-FRERMIP-636)
B2	Long term view of Brahmaputra/Jamuna channel planform	AN	EM		x							Finally Printed. (22 Sep 2019 ISPMC-FRERMIP-636)
B3	Cross-Section Analysis on Brahmaputra, Jamuna and Padma Rivers	MRJ	GJK		x							Finally Printed. (22 Sep 2019 ISPMC-FRERMIP-636)
B4	Char characteristics and dynamics – past and present conditions on basis of satellite imagery	MHS	GJK		x							Finally Printed. (22 Sep 2019 ISPMC-FRERMIP-636)
B5	Upper Meghna - present conditions and issues	JAA/MHS	CS		x							Finally Printed. (22 Sep 2019 ISPMC-FRERMIP-636)
C1	River bifurcations: Theory and model experience	EM	KO			x						Finally Printed. (23 Feb 2020, ISPMC-FRERMIP-671)
C2	Anabranching Channels of the Jamuna and Padma Rivers	MHS	CS			x						Finally Printed. (23 Feb 2020, ISPMC-FRERMIP-671)
C3	River bifurcations: Simplified numerical modelling	AT	SG/GJK			x						Finally Printed. (23 Feb 2020, ISPMC-FRERMIP-671)
C4	Reach 3 and bifurcation: numerical modelling	AT/SG	EM			x						Finally Printed. (23 Feb 2020, ISPMC-FRERMIP-671)
C5	Offtake and Flow Dynamics of the Major Rivers	MHS	CS			x						Finally Printed (23 Feb 2020, ISPMC-FRERMIP-671)

C6	Offtakes part 2 Numerical model studies and generic guidelines	MY	EM			x						Finally Printed. (23 Feb 2020, ISPMC-FRERMIP-671)
D1	River Stabilization Plan -Technical Basis	GJK	KO				x					Finally Printed. (4 June 2020, ISPMC-FRERMIP-685)
D2	River stabilization of other main rivers	GJK/ BH/ EM	BH/GJ K				x					Finally Printed. (4 June 2020, ISPMC-FRERMIP-685)
D3	Earlier proposals and attempts for stabilization of Jamuna River (include capital dredging)	MZ/ BW/ JM	KO				x					Finally Printed. (4 June 2020, ISPMC-FRERMIP-685)
D4	Intermediate and final planform alternatives	MRJ /GJK	KO				x					Finally Printed. (4 June 2020, ISPMC-FRERMIP-685)
D5	Feasible techniques and methods for riverbank protection and future channel narrowing	AN	BH				x					Finally Printed. (4 June 2020, ISPMC-FRERMIP-685)
D6	Underwater Apron for Chandpur Confluence	MRJ /AT	SG				x					Finally Printed. (4 June 2020, ISPMC-FRERMIP-685)
E1	Main river flood risk and management	Mho /DS	DS					x				Finally Printed. (31 Oct 2019, ISPMC-FRERMIP-650)
E2	Flooding numerical modelling	DS	BH					x				Finally Printed . (31 Oct 2019, ISPMC-FRERMIP-650)
F1	Long-term effects of river narrowing on water levels	EM	KO						x			Finally Printed. (14 May 2020, ISPMC-FRERMIP-683)
F2	Effects of sinuosity on channels and bars	MY	EM						x			Finally Printed. (14 May 2020, ISPMC-FRERMIP-683)
F3	River stabilization and Sediment Management	GJK	BH						x			Finally Printed . (14 May 2020, ISPMC-FRERMIP-683)
F4	Char Stabilization Impact Modelling	SB/G JK	EM						x			Finally Printed. (14 May 2020, ISPMC-FRERMIP-683)
F5	Impact of Earthquake Induced Sediment Supply Variability	EM/ AN	GJK/B H						x			Finally Printed. (14 May 2020, ISPMC-FRERMIP-683)
F6	Future conditions affecting flows	MCC	ML						x			Finally Printed. (14 May 2020, ISPMC-FRERMIP-683)
G1	Distributaries: Water resources preparation and baseline	WO/ ML	ML							x		Finally Printed. (23 Feb 2020, ISPMC-FRERMIP-671)
G2	Potential Impacts of Flow Augmentation and Study Needs	WO/ ML	EM							x		Finally Printed. (23 Feb 2020, ISPMC-FRERMIP-671)
H1	Socio-economic Aspects	MH/ SN	JLL								x	Finally Printed. (14 May 2020, ISPMC-FRERMIP-683)
H2	Environmental and social aspects of river stabilization: Remedial measures	WB/ MH	CS								x	Technically Complete. (14 May 2020, ISPMC-FRERMIP-683)
H3	Fisheries Impacts of FRERMIP and their Management: A Pre-project Status Review	SH	CS/W B								x	Technically Complete. (14 May 2020, ISPMC-FRERMIP-683)
H4	Planning the Use of Stabilized and Reclaimed Land, Procedure and Issues	MH	CS								x	Finally Printed. (14 May 2020, ISPMC-FRERMIP-683)
H5	Charland amelioration and	QRI/ AC	AC								x	Finally Printed. (14 May 2020, ISPMC-FRERMIP-683)

	agriculture development											
H6	Economic Assessment of River Stabilization	JR/AI	KO								x	Finally Printed. (14 May 2020, ISPMC-FRERMIP-683)

Abbreviations:

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

0	**Reports Annex Submitted**
0	**Formatting Reviewed**
0	**Formatted**
37	**Finally Printed**
0	**Draft Complete**
0	**Under Preparation**
	Total

Appendix-E

Table E 1 ISMPC performance compliance with TOR

Tasks by ToR	Tasks Done	Current Tasks	Future Tasks
Task-1: Supporting BWDB for institutional capacity strengthening of the holistic and strategic management of the main rivers	1 Inception Report, 20 Quarterly Progress Reports, 1 Mid-term Review Report, have been submitted.	The Quarterly Progress Report-20 for April-June 2020 quarter is prepared	Project completion reports will be submitted.
Task-2: Supporting BWDB and DDM for project implementation management of Tranche-1	1. Institutional capacity strengthening: From RDPP Budget 12 Trainings and tours done.	1. Institutional capacity strengthening: From RDPP Budget, 6 of 7 local trainings and 6 of 9 overseas trainings have been implemented.	1. Due to world-wide travel restrictions associated with the Covid-19 pandemic, it is unlikely that the remaining overseas training / study tours can take place before the end of Tranche-1.
	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.	2. Data and knowledge base development for flood and river management: the river survey database is being populated and prepared for hand- over to BWDB. One BWDB official has been trained on database over a number of weeks to ensure more effective handover. The project monitoring database is currently being used by the ISPMC to generate quarterly progress reports and assist the PMO.	-
	3. Support BWDB for supervising physical works: Supervising for Riverbank	-	-

	protection works at three sites since October 2015. The ISPMC has submitted construction completion report for all work packages.		
	4. Support DDM for implementing Community-based Flood Risk Management: Implementation NGO has been contracted in August 2018	4. The INGO has finished implementing their contract assigned.	-
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 was updated with the final feasibility report in March 2019.	Final Feasibility Report is approved. ISPMC is working on the amendment of feasibility report. ADB evaluation of safeguard documents ongoing.	Updated EIA 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	Strategic framework on long-term river stabilization plan was presented in a workshop on	All reports are technically completed and submitted to PMO. Letter references are provided in Appendix D	-

Lower Meghna rivers covering from the Indian border to the estuary (by the river study task team)	December 2016. It was submitted on May 2017 and recommended to the Technical Advisory Committee on September 2017. This report was approved on 24 June 2020.		
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 is incorporated in River Study Technical Note 2. It is prepared and submitted on 14 May 2020, letter reference ISPMC-FRERMIP-683.	-
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. The work package on pilot works has started in March 2019.	ISPMC has completed construction completion report for W14 and W16 and submitted	-
Task-7: Hydraulic and morphological analyses for the Jamuna-Meghna and Jamuna-Padma-Ganges confluences (by the river study task team)	Strategic framework on long-term river stabilization plan was presented in workshop on December 2016. It was submitted on May 2017 and recommended by the Technical Advisory Committee on September 2017.	4 main reports were finalized and submitted on various dates. Letter references are provided in Appendix D.	-

Table E 2 ISMPC deliverables in compliance with TOR

Regular reports	**Status**	**Remark**	**Reference & Future Task**
Inception report	Submitted on 10 Feb 2016	Approved by the TAC	Letter ISPMC-FRERMIP-084
Quarterly progress reports	20 QPRs submitted since 2015	-	
Mid-term report	Submitted on 20 Feb 2018	-	Letter ISPMC-FRERMIP-459
Tranch-1 completion report	Pending as Tranche 1 is not yet completed	-	-
Technical reports and other deliverables			
Reports and documents for formulating Tranche-2			
Validation of selection of priority protection river reaches and structural design for Tranche-2, including morphological and flood inundation analyses,	Site selection report submitted and approved by the 4th TAC in Sep 2017 Design or riverbank protection and embankment works submitted with feasibility study on 5 May 2019	-	ISPMC-FRERMIP-609
Feasibility Study for Tranche-2 works,	Submission of first draft on 4 Feb 2018 Submission of updated FSR on 29 Apr 2019 Submission of draft final FSR on 28 Aug 2019	The draft FSR was approved by the TAC on 8 Oct 2018 and subsequently updated in line with the technical committee meeting on 8 Sep 2019. An addendum will be prepared reflecting the outcome of the discussions between ADB and Government during the loan fact finding mission for Project-2.	ISPMC-FRERMIP-476 ISPMC-FRERMIP-608 ISPMC-FRERMIP-631
Draft Tranche-2 approval documents, such as a Periodic Financing Request (PFR), its attachments, associated due diligence and safeguard documents,	Draft versions sent on: PFR – under preparation to be submitted in Oct 2020 PAM – 2 Jul 2020	Submissions are documented in a regularly updated register	Draft updated PFR will be submitted

Regular reports	Status	Remark	Reference & Future Task
and other necessary documents to meet ADB's loan approval requirements,	DMF – Jul 2020 EARF – 4 Jun 2020 RF – 5 Apr 2020 RPs – 22 and 25 Jun 2020 EIA – 8 Jul 2020 SPRSS – 17 Apr 2020 CCA – 4 Jul 2020 CRVA – 7 Jun 2020 GAP – 13 Apr 2020		
The updated environmental assessment and review framework, draft environmental impact assessment (EIA) reports (or draft initial environmental examination [IEE] reports, depending on the safeguard categorization of examination [IEE] reports, depending on the safeguard categorization of Tranche-2), updated resettlement framework, and resettlement plans to meet approval requirements of the government and ADB,		-	
Necessary data and information for preparing a development project proposal/proforma (DPP),	Technical notes, designs and cost estimates have been submitted together with the feasibility study and the river stabilization plan, allowing the preparation of a DPP. Draft DPP will be submitted		Draft DPP will be submitted
Updated guidelines for riverbank protection works,	Part of the approved Project-2 feasibility study and to be prepared by a working group from the BWDB design office and BUET potentially involving international experts.	In accordance with the FAM and the Aide memoire (Dec 2015), Tranche 1 includes collection of data with the preparation of the guidelines in Tranche 2. All relevant data have been submitted to PMO	Facility Administration manual (P 47) Aide Memoire Dec 2015 (para 8). As part of the data collection, ISMPC has recorded launching behaviour in the four flood season monitoring reports for FRERMIP and JMREMP sites.

Regular reports	Status	Remark	Reference & Future Task
Proposal of capacity enhancement program for new Chief Engineer (River Management) office, if necessary,	BWDB has established the office of CE (RM) by an office order on 10 October 2019	The position of the CE (RM) has been approved by all relevant authorities and all staff have been posted	Based on the Round Table Discussion occurred on 28th March 2016 the role of the CE(RM) was briefly discussed and based on that TOR for the office of the CE (RM) was prepared. It is attached in Appendix K.
MIS and action plan for institutionalizing sustainable MIS operation,	ToR submitted on 18 Oct 2016, Review of WMIP SIMS and SPMMIS submitted on 10 Nov 2016 Draft River Survey Spatial MIS Documentation submitted on 15 Mar 2018		ISPMC-FRERMIP-226 ISPMC-FRERMIP-246 ISPMC-FRERMIP-474
Guidelines for participatory regular O&M of the flood and erosion risk protection infrastructure,	Deferred to Project 2.	Participatory regular O&M deferred to Project-2	AM Mid-term review mission Feb 2018
Supporting BWDB for Developing multi-annual(5 years) budgetary and construction material stocking plans for quick response to required O&M and emergency works of riverbank protection works		Plan will be submitted.	
institutional capacity strengthening training programs and their implementation plan for BWDB	Trainings performed as listed in Table 2-5 and Table H3. Trainings were scheduled in coordination with the PMO as documented in the QPRs and tailored to address topics as relevant to PMO and the project.	Three round table discussions with senior level BWDB officials were held on Capacity Development and River Management on 28 March, 25 May and 28 October 2018 in	

Regular reports	Status	Remark	Reference & Future Task
		Hotels Pan Pacific Sonargaon and Lake Castle	
Contribution to dissemination of project achievements at international conferences.	Study tours and conferences performed and attended as listed in Tables H2 and H3		
By the River Study Task Team			
Long-term river channel stabilization plan for the Jamuna, Padma and Lower Meghna rivers, including technical note on morphological trend,	Submitted as River Stabilization Plan (RSP) on 5 Feb 2020	Approved by the DG on 24 June 2020.	ISPMC-FRERMIP-666
Framework for preparing long-term sector road map for the management of the main rivers,	Strategic Framework submitted on 26 Apr 2017		ISPMC-FRERMIP-340
Preliminary river management master plan for the Jamuna-Padma-Meghna river -system,	Submitted as Annex A2 to the RSP on 22 Sep 2019		ISPMC-FRERMIP-636
Contribution to dissemination of study findings at international conferences	Conferences (i) 8th International Conference on Scour and Erosion, 12-15 September 2016, Oxford, England. Attended by DG BWDB, PD PMO FRERMIP and TL ISPMC. (ii) Asian Water Forum 2018, ADB Headquarter, Manila, Philippines, 2-4 October 2018. Presentation on "Structural Solutions to Mitigate Flood and Riverbank Erosion Disasters along the Brahmaputra in Assam, India and Bangladesh" through SMO Koitola. Papers (i) Oberhagemann, K.; Haque, A.M.A, 2016: Development of low cost riverbank protection in Bangladesh. 8th International Conference on Scour and Erosion, Oxford, England,12-15 September. (ii) Thompson, A.; Oberhagemann, K.; Yuntong, S.; Haque, A.M.A, 2018: The Behavior of self-launchign Geotextile Bag Aprons – latest Developments from the Lower Brahmaputra in Bangladesh. 9th International Conference on Scour and Erosion, Taipei, Taiwan, 5-8 November.		

Regular reports	Status	Remark	Reference & Future Task
	(iii) Khan H.; Oberhagemann, K.; Choubey, R.I.; Hawskwood, M.; Habib, A., 2021 (planned): Case studies of erosion protection pilots in Bangladesh: Embankments, Vetiver grass and using jute where it "mattress". 10th 9th International Conference on Scour and Erosion, USA.		
Technical notes on morphological and hydraulic behaviour at the Jamuna-Ganges and Padma-Meghna confluences, and long-term plan of riverbank protection measures at the confluence areas, and	Submitted as Annexes B and C to the RSP on 22 Sep 2019	Hydraulic model will be submitted.	ISPMC-FRERMIP-636
Technical notes on piloting site selection and recommendations for effective measures to accelerate natural/structural intervention-induced land recovery along the main rivers towards the future river stabilization, and a monitoring report on the land recovery/river training piloting scheme, one note for the main river and the other note for other rivers.	First selection submitted on 24 Jan 2016 Final memo and bidding document on 4 Oct 2017 Findings and performance assessment on 7 Jun 2020		ISPMC-FRERMIP-067 ISPMC-FRERMIP-408 ISPMC-FRERMIP-686

Appendix-F

Revised Gender Action Plan

Quarterly Progress Report on Revised Gender Action Plan (GAP) Implementation Monitoring

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

Project Title : Flood and Riverbank Erosion Risk Management Investment Program (Tranche-1) (2nd Revised)

Date of Update : 30/06/2020 **Submission Date:** 20/07/2020 -

Agency : Bangladesh Water Development Board (BWDB)

Timeframe : April 2014 to June 2021

Gender Category : **Effective Gender Mainstreaming (**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 of 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

Is there a Gender Specialist : A Gender Specialist worked (intermittent basis) in Institutional Strengthening and Project Management Consultant (ISPMC). Presently the Gender specialist has utilized all her man-months. An Executive Engineer of PMO is appointed as Gender Focal Point. He is working for GAP implementation till date.

If not, how gender mainstreaming is supported ? N/A

Output/Activities	Indicators and Targets	Progress in this Quarter (01 Apr 2020 – 30 Jun 2020)	Cumulative Progress (up to 30 Jun 2020)	Remarks/Comments
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				
- Ensure women benefit from employment in construction - Ensure gender-related aspect of labor standard including equal wage for women and men for equal work - Ensure occupational health and safety, safe water supply, sanitation is in place (incl. separate toilets)	1. Specific condition included contractors' bidding document whereby 5% unskilled labor opportunities be given to women.	- Total 2250 persons worked during this quarter in all 7 contract packages. Among them 170 (7.56%) were female worker.	A total of 2469 female labours (8.61% of total) out of total 28687 labour worked in construction sites till date.	Contract packages W01 to 05, W-14 to 16 has been revised and as per revised contract agreements, Contractors are now appointing min. 5.00 % female as unskilled labors.
	2. Orientation 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	-	One training session covering three courses on "Gender Awareness Training for SMO's engineers and contractor's staff" for work package W-04 and W-05 was held on 21 December 2018 at XEN office, Koitola. Three courses on "Orientation session to verify and ensure that Core Labor Standard conditions are met for SMOs Engineers and Contractors Staff" have been held at the Koitola work site for work packages W-01, W-02 & W-03 on 22 December 2018 at XEN office, Koitola. During these sessions 1 XEN, 1 SDE, 2	There are 3 SMOs under the project. But presently work site is running only at Koitola SMO. The training sessions held for Contract Packages No. W-01 to 05 under Koitola SMO.

Output/Activities	Indicators and Targets	Progress in this Quarter (01 Apr 2020 – 30 Jun 2020)	Cumulative Progress (up to 30 Jun 2020)	Remarks/Comments
			Section Officers, 5 site managers, 5 site supervisors, 3 site engineers of Koitola SMO were present. Out of total 78 participants 6 were female.	
	3. Provisions for either separate toilets for women or arrangements for use of facilities in nearby communities and/or households	In 7 places of 7 contract packages separate toilet for women built at running work sites.	7 Separate toilets for women in 7 Contract Packages (W-01 to 05, W-14 & W-16) along with arrangements for use of facilities in nearby communities and/or household have been provided till date at running work sites.	-
	4. Sex-disaggregated information in field monitoring quarterly reports and contractors' compliance reports	Sex-disaggregated data collection is on-going till this quarter.	Sex-disaggregated data collected till the quarter.	-
A2 Formulating Community Disaster Management Units				
- Form 40 Community Disaster Management Units (CDMUs) - Develop a community flood risk assessment and community risk reduction plan	5. CDMUs (40) - consisting of 15 male and female volunteers/each-established with minimum 33% units led by women (baseline=0).	-	Out of 40 CDMUs, 39 CDMUs consist of total 15 volunteers which include both male and female members and the rest 01 CDMU consists of 20 volunteers. Out of total 605 volunteers, females are 244 (40.33%) nos. 100% CDMUs are led by women as Leader/Deputy Leader.	CbFRM component implementation started from 1 September 2018 and completed on 30 June 2019.
	6. ***Community Flood Risk Assessment*** prepared identifying: (i) risks for women, men,	-	40 Community Risk Assessments were conducted in 40 identified CDMUs, identifying: (i) risks for vulnerable groups i.e. women, children, elderly, disabled and other, and (ii) disaster response	***Community Flood Risk Assessment*** were introduced in ***Community based Disaster Preparedness***

Output/Activities	Indicators and Targets	Progress in this Quarter (01 Apr 2020 – 30 Jun 2020)	Cumulative Progress (up to 30 Jun 2020)	Remarks/Comments
	children and vulnerable groups; and (ii) disaster response mechanism related to flood and erosion warning;		mechanism related to flood and early erosion/disaster warning.	***Plan (CDPP)*** at page 2.
	7. ***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	-	40 plans were prepared in 40 CDMUs through participation of male and female volunteers, specifying roles, provisions for women and men in terms of disaster preparedness at HH and community level. In each of these planning processes, 30-35 community people participated among which at least 27 were female (90%) and they participated as representative from their household/family. iii) the risk reduction measures included but not limited to: - Dissemination of flood early warning in local context using local reference points - Raising awareness among vulnerable communities - Installation of flood markers - Linkage between relevant govt. officials and vulnerable community - Raising household plinth, tube-wells	***Community Risk Reduction Plan*** was named as ***Community based Disaster Preparedness Plan (CDPP)*** in the ToR of signed Contract with DDM.

Output/Activities	Indicators and Targets	Progress in this Quarter (01 Apr 2020 – 30 Jun 2020)	Cumulative Progress (up to 30 Jun 2020)	Remarks/Comments
			and latrines - Storing dry foods, medicine and fuel - Assisting flood affected people to evacuate in flood shelters, particularly women, children, elderly and people with disabilities	
	8. 60 locations identified and build community flood markers for flood warning information	-	114 densely populated locations were identified in the vicinity of the rivers and canals. In these identified locations, a total of 114 flood marker posts were installed which are easily identifiable by men, women and children as flood warning information.	-
A3 Formulating Community Disaster Management Units				
- Initiate community-based flood warning dissemination procedures building on indigenous techniques - Disseminate regular warning messages in relevant to local context/language in line with national warning network	9. 50% of the units have flood warning mechanisms [Source: end-line beneficiary survey]	-	Trained 604 male and female volunteers from 40 CDMUs to follow flood warning procedure and disseminate warnings by- i. using local language; ii. using mosque mikes; iii. using megaphone from local Union Parishad; iv. using local reference point to explain danger level Introduced flood-warning mechanisms to the community people through 100% units, which are yet to be tested during flood cycle between July to August 2019 or next.	National warning may not reach communities as the warning are not relevant to the local contexts. ***End-line Beneficiary Survey*** was not conducted as it was not included in the ToR of the Contract Agreement signed with DDM.
	10.20 knowledge events held [Target: 100 women]	-	A total of 7,260 knowledge events i.e. courtyard sessions were conducted by all 605 female and male volunteers to share	-

Output/Activities	Indicators and Targets	Progress in this Quarter (01 Apr 2020 – 30 Jun 2020)	Cumulative Progress (up to 30 Jun 2020)	Remarks/Comments
			knowledge and practices on flood warning mechanism in local context. Representatives from 60,000 beneficiary households participated while almost 45,000 (=>75%) women were present.	
	11. 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].	-	100% of the 60,000 identified beneficiary households, including low-income households, and poor women living on the embankment participate have increased resilience through preventive measures at household level.	***End-line Beneficiary Survey*** was not conducted as it was not included in the ToR of the Contract Agreement signed with DDM.
A4 Construction of Resettlement Areas with Basic Infrastructure and Facilities				
- 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	12. Full compensation for 100% women PAPs as per RP entitlement	Total 243 APs received resettlement cost/benefit and replacement cost. Among them, 33 are women (100% women PAPs paid). Total 89 EPS received CCL through DC Office. Among them, 11 are women (100% women EPs paid).	Total 2535 out of 2720 APs received resettlement cost/benefit and replacement cost. Among them, 244 are women (100% women PAPs paid). Total 3746 out of 4256 EPS received CCL through DC Office. Among them, 115 are women (100% women EPs paid).	-

Output/Activities	Indicators and Targets	Progress in this Quarter (01 Apr 2020 – 30 Jun 2020)	Cumulative Progress (up to 30 Jun 2020)	Remarks/Comments
(RP) - Ensure that gender issues are considered when planning resettlement villages and community facilities				
	13.33% women involved in planning meetings	-	Total 324 planning meetings were held till date where more than 16200 persons attended and out of which female are more than 9072 nos (=>56%).	Gender Issues were considered while forming resettlement villages and communities.
Output II: Strengthened Institutional Systems for Flood and Riverbank Erosion Risk Management				
A5 Capacity Enhancement of BWDB				
- Integrate a gender-specific module in the BWDB training - Build capacity of female staff in BWDB	14.10% women in training programs		40 % women (16 out of 40) have participated in the Gender specific training held in March 2019.	-
	15.- 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		Total 5 training program held. Total 132 participants attended out of which 57 participants were female (43.18%). - In November 2018, "training/ orientation session for SMOs" was held where all staff of site offices attended. Out of 14 participants 2 (14.29%) were female. - In June 2017, 01 gender specific course has been held for building capacity of female staff in BWDB HQ. Out of 32 participants, 25 (78.13%) were female. The main discussions were importance of gender in water management project and concept of gender with government's	

Output/Activities	Indicators and Targets	Progress in this Quarter (01 Apr 2020 – 30 Jun 2020)	Cumulative Progress (up to 30 Jun 2020)	Remarks/Comments
			commitment. ADB's Gender Specialist attended as resource person in that course/workshop. - In October 2017, "Training for River Survey Database" was held, where 1 participant was female out of 6 (16.67%). In March 2019, one gender specific training was held in Design Office, BWDB. Total 40 participants including 16 (40%) females attended there. - On 16 April 2019, "Updation of specifications of geotextile' training was held where 13 (32.50%) female engineers from BWDB design wing out of 40 participant attended	
Output III: Program Management Systems Operational				
A6: Implementation Management				
- Establish MIS system with sex disaggregated data base for project reporting	16. - Identify gender indicators, incorporate in monitoring system and ensure regular reporting of progress of GAP implementation	Regular reporting of progress of GAP implementation identifying gender indicators are in progress. Sex-disaggregated data being used in Quarterly Progress Report No. 20 (April-June 2020).	Regular reporting of progress of GAP implementation identifying gender indicators and incorporating in regular monitoring system are being done regularly till date.	Due to shortage of fund, establishment of MIS system was dropped during the 1st revision of project DPP and will be implemented under Project-2.

Appendix-G

Table G 1 Compliance status with Loan and Grant Agreement Covenants

Sl.No.	Covenant Description	Comply[2]	Evidence to Support Claim
Implementation Arrangements			
1	Project is implemented in accordance FAM.	Yes	All Environmental, Social and Financial provisions outlined in the FAM are being satisfactorily implemented.
2	PMO, SMOs and PMU shall employ sufficient and experienced staff.	Complied and being compiled Being compiled	• BWDB: on average, the PMO has only 55% of Senior Staff as specified in DPP. • DDM: PMU only has only 2 staff, and the Project Manager is on additional charges.
3	PMO, SMOs and PMU staff shall remain for a reasonable period of time.	Yes Being compiled	• BWDB: PD stayed for over 4 years. new PD has been in role for more than two years • DDM: had 3 Project Managers in 2.5 years
4	The PMO PD shall have a rank not less than a Superintending Engineer.	Yes	PMO both PDs had rank of Superintending Engineer.
5	BWDB shall establish a CE River Management office responsible for flood and riverbank erosion risk management.	Yes	On 22-Nov-2017, BWDB established the office of CE River Management, and appointed a Chief Engineer.
Counterpart Support			
6	If Borrower cannot avail of the proceeds of the Grant, the Borrower shall find an alternative source of funding.	Yes	No problem has occurred in availing Grant money.
7	The Borrower shall reimburse BWDB for any taxes and duties imposed for Goods, Works and Consulting Services.	Yes	Typically, taxes and duties are being reimbursed by the Borrower as per their portion of each Loan Category.
Selection of Subproject areas			
8	BWDB shall ensure that Subprojects are selected in accordance with FFA Schedule 4.	Yes	All 3 selected Subprojects are included in the approved Project-1 Feasibility Study completed in Dec-2013.
Environment			

9	Project facilities comply with environmental safeguards, laws and regulations, EARF, EIA/EMP, and reported upon in Monitoring Reports.	Yes	EIA approved, EMP being implemented, SESA drafted, and Quarterly and Semi-Annual Monitoring Reports submitted. These reports document satisfactory compliance with environmental safeguards.
Land Acquisition and Involuntary Resettlement			
10	BWDB shall ensure that all land and all rights-of-way are available to contractors in a timely manner.	Yes	Contractors' work have not been delayed due to land acquisition issues for riverbank protection
	(a,b,c&d) Land acquisition and resettlement comply with applicable laws, Involuntary Resettlement Safeguards, RF, and RP.	Yes Yes	Riverbank Protection: land acquisition done after construction, due to severe erosion potential and local public demand. A Corrective Action Plan is currently being implemented. Embankment: land acquisition and resettlement processes have been properly followed.
11	BWDB shall ensure that there is no physical or economic displacement until:		
	(a) compensation and other entitlements have been provided to affected people	Yes	• Refer to Sl.No. 10 above. However, compensation process is now actively ongoing for embankment.
	(b) a comprehensive income and livelihood restoration program has been established	No	• Deferred to Tranche-2
Indigenous Peoples			
12	BWDB shall ensure that the Project does not have any indigenous peoples' impacts.	Yes	No indigenous people affected by project.
Human and Financial Resources to Implement Safeguards Requirements			
13	BWDB shall fully implement the EMPs and the RPs.	Yes	EMPs included in all Civil Work contracts, and an INGO is actively engaged to develop all RPs. Monitoring results are regularly being reported.
Safeguards			
14	BWDB shall ensure that all Works contracts require contractors to:		
	(a) comply with EIA, EMP and RP; and Safeguards Monitoring Report actions	Yes	Covered in 'Technical Specifications' under Section 2. Environmental Management Plan and Safety at the Site.
	(b) include a budget for environmental and social measures	Yes	Included in Bill of Quantities, Bill No. 02: Environmental Management Works.

	(c) provide written notice of unanticipated environmental, resettlement or indigenous peoples' risks	Yes	No special clause found to provide written notice of unanticipated environmental, resettlement or indigenous peoples' risks.
	(d) adequately record pre-Work condition of roads, agricultural land and infrastructure	No	No special clause found requiring contractors to record pre-work condition in riverbank protection contracts. Embankment contracts contain clause 2.2.2 in the technical specifications requiring access roads to be inspected for appropriateness before use. There is no mention of agricultural land or infrastructure.
	(e) fully reinstate pathways, other local infrastructure, and agricultural land pre-Work condition	Yes	Adequately covered in Section 2. 'Environmental Management Plan and Safety at the Site' of the Technical Specifications.
Safeguards Monitoring and Reporting			
15	BWDB shall:		
	(a) submit semi-annual Safeguards Monitoring Reports to ADB	Yes	ISPMC submit Monitoring Reports on quarterly and bi-annual basis on environmental and social issues.
	(b) promptly document any unanticipated environmental and social risks and impacts	Yes Yes	Environmental: No serious unanticipated risks or impacts have occurred. Social: Resettlement Issues documented in QPR.
	(c) within 6 months, engage external experts to verify information regarding land acquisition and involuntary resettlement	No	The bid document has been received and evaluated, short-listing completed, and negotiations are ongoing for External Expert. Contract award is expected by early Feb-2018.
	(d) promptly report any breach of compliance with EMP or RP	Yes Yes	Environment: Non-compliances reports are submitted by ISPMC. A joint ISPMC/ PMO inspection took place in July 2019 Social: Resettlement Issues documented in QPR.
Prohibited List of Investments			
16	BWDB shall ensure that Loan or Grant funds are not used for prohibited investment activities.	Yes	Accounting procedures are being rigorously maintained by PMO and no evidence of misuse has been found.
Labour Standards			
17	All civil works contracts require contractors to:		
	(a) comply with labour standards, labor laws and	Yes	Covered in 'Conditions of Contracts for Construction', under Section: 6. Staff and Labour.

	applicable health and safety principles		
	(b) eliminate discrimination between men and women for work of equal value	Yes	Adequately covered in 'Conditions of Contracts for Construction', under clause: 6.24 Nondiscrimination and Equal Opportunity.
	(c) eliminate child labour, and forced or compulsory labour; and allow freedom of association	Yes	Covered in 'Conditions of Contracts for Construction', under clause: 6.21 Child Labour.
	(d) maximize employment of local poor and disadvantaged persons	Yes	Local poor people, women were employed in all sites
	(e) disseminate information on sexually transmittable infections and HIV/AIDS	Yes	Covered in 'Conditions of Contracts for Construction', under clause: 6.7 'Health and Safety'.
	(f) implement applicable provisions of GAP	Yes	No special clause found related to provisions of GAP in the contract documents. Requirements e.g. for a minimum % of women laborer were followed by the embankment contractors
Gender and Development			
18	BWDB shall implement the GAP, and monitor and report on key gender outcome and output targets.	Yes	GAP outcomes and outputs are being documented in QPR.
Quality Assurance			
19	Engage external experts to inspect and store results of completed riverbank protection works using accurate surveying equipment.	Yes	ISPMC performs a rigorous and regular Flood Monitoring Program including Multi-Beam EchoSounder surveys which are currently ongoing under package W16. Scuba diving investigations were also conducted for riverbank protection.
Panel of Experts			
20	BWDB shall engage experts to analyze project implementation constraints, and advise on remedial measures.	Yes	There has been four Technical Advisory Committee (TAC) Meetings to review Project technical issues and make recommendations. A Technical Committee was also formed by BWDB to investigate slope failures at Chauhali.
Inter-agency Coordination			
21	BWDB shall timely notify all relevant agencies of their riverbank protection works.	Yes	ISPMC has one Specialist permanently deputed to DDM, who updates PM PMU on project activities.

Operation and Maintenance of Project Facilities			
22	Ensure that:		
	(a) BWDB inspect and maintains all Works rehabilitated according to O&M plans	Yes	ISPMC performs a rigorous Flood Monitoring Program to identify status of Riverbank Protection Works.
	(b) BWDB submits annual budgets to MoWR for O&M works according to the plans	Yes	Provisional 2017/18 ADP funding for Adaptive Protection and Emergency work is BDT 89 million; other funding also available.
	(c) Borrower allocates adequate resources for BWDB to carry out O&M works	Yes	Funding for 2017/18 Emergency/Adaptive work is expected to be around BDT 160 million. Koitola riverbank protection transferred to O&M Division in Dec-2017.
23	BWDB shall maintain adequate stockpiles of geo-textile bags for emergency riverbank protection works and repairs.	Yes	At Tangail Geobag stockpiles are maintained. At Koitola and Manikganj there are shortages of geobags
24	BWDB shall provide local communities with land use rights for embankment to promote livestock grazing and tree cultivation.	Partially Compiled	Tree cultivation deferred to Tranche-2
Road Map and Policy and Institutional Reforms			
25	BWDB shall implement timely institutional reform actions identified under Investment Program policy framework.	Yes	Refer to Sl.No. 5 reply regarding the establishment of CE River Management office.
Policy Dialogue and Coordination with Development Partners			
26	BWDB shall keep ADB informed of discussions with government and quasi-government bodies responsible for water sector development.	Yes	This is being done through periodic ADB Missions, and regular discussions and correspondence between PMO and ADB BRM.
Governance and Corruption			
27	BWDB shall comply with ADB's Anticorruption Policy and cooperate with any investigations.	Yes	No evidence of corruption in dealing with any project activities have been reported or found.
28	BWDB shall include anticorruption provisions in contracts, allowing ADB to audit records of	Yes	Covered in the 'Conditions of Contracts for Construction' Section, under clause: 15.6 Corrupt and Fraudulent Practices.

	contractors, suppliers, and consultants.		
29	BWDB shall announce all business opportunities on their websites, including participating bidders, winning bidders and contract award amounts.	Yes	Adequate contract information is available on: www.bwdb.gov.bd/index.php/site/live_tender
30	Borrower shall periodically inspect financial activities related to the procurement of Goods, Works and Consulting Services.	Yes	Foreign Aided Project Audit Directorate (FAPAD) audits carried out on a annual basis.

Notes: 1. Implementation Arrangement Covenants are defined in Loan Agreement Schedule 5.
2. Valid Comply answers include: Yes, No or na (non-applicable)

Appendix-H

Table H 1 Status of Local Trainings, PMO-FRERMIP

Name of Training	Trainees	Number	Unit	Status	Time	Executing Agency
River Engineering	20	2	Course	Complete	Apriil 2016	BUET
River Trainig Techniques	20	2	Course	Complete	February 2017	BUET
Riverbank Protection	20	1	Course	Complete	July 2018	BUET
Topographical, Morphological & Hydrometric Survey and Data Collection	10	1	Course	Complete	January-February 2019	IWM
Land Acquisition and Resettlement Management Course	15	1	Course	Complete	January 2019	CEGIS
Environmental Impact Assessment	15	1	Course	Complete	October 2018	CEGIS
Capacity Building for DDM	15	1	LS	Pending	-	-

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

Name of Training/Course	Number	Trainees	Unit	Status	Time	Place
River Morphodynamics and Erosion Protection Practices	1	8	Course	Complete	September-October, 2016	UNESCO-IHE, Netherlands
River Morphodynamics and River Training Techniques	1	8	Course	Complete	June-July, 2017	UNESCO-IHE, Netherlands
Study of the Management of Yellow and Yangtse River and Flood and Erosion Protection Works	1	5	Tour	Complete	August, 2016	Renmin University,China
Missisipi River Management and Alied Erosion Protection Work	1	10	Tour	Complete	October, 2017	USA and Canada
Geofabrics Geotextile Factory and the Coastal Protection Works	1	10	Tour	Complete	July, 2018	Australia
Application of Geotextile on Innovative Interventions and Experience Sharing	1	10	Tour	Complete	September 2018	The Netherlands and Germany
Study Tour-2	1	5	Tour	Pending	-	-
Study Tour-3	1	8	Tour	Pending	-	-
Study Tour-4	1	8	Tour	Pending	-	-

Table H 3 Implementation Progress of Training Activities by ISPMC

Sl.	Description	Completed				Date				Remarks
		No. of Courses	No. of Trainees							
			M	F	Total	FY 15-16	FY 16-17	FY 17-	FY 18-19	
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	31	41	32			31-Jul-17	20 Mar-19	BWDB Design Office Conference Room
5	Training: Gender Awareness for SMO Engineers and Contractors	7	32	3	35				21-22-Dec-2018	XEN office, Koitola
6	Training: River survey database management training and on the job training	6	5	1	6				Oct-2018	ISPMC office
7	Updating of specifications of geotextile	1	27	13	40				16 April, 2019	BWDB Design office conference room
	Sub Total	**20**	**215**	**62**	**277**					
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	**22**	**635**	**225**	**860**					

Appendix-I

Table I 1

Bathymetric Survey Summary

Project	Surveys	End Date	Start Date
Bazar Station Groyne	16	12-Jul-2014	17-Jun-1998
Betil Spur	10	20-Sep-2014	26-Oct-2002
Chandan Baisha Groyne	5	26-Nov-2011	05-Jul-2002
Chandpur	6	01-Aug-2003	01-May-2001
Chauhali	27	23-Jun-2020	04-May-2016
East Guide Bun	10	25-Jul-2004	11-Apr-2004
Enayetpur Spur	28	05-Oct-2018	26-Oct-2002
Ganges	4	19-Oct-2001	19-Oct-2001
Harirampur	12	03-Nov-2019	15-Jun-2012
Hasnapara Spur	1	30-Jul-2002	30-Jul-2002
Kalitola Groyne	56	28-Oct-2016	04-Sep-2001
Koijuri	11	22-Jun-2020	23-Nov-2004
Lower Jamuna Full River	9	22-Sep-2019	15-Sep-2015
Mathuapara Groyne	66	08-Aug-2016	23-Dec-1998
MDIP	8	15-Jan-2009	23-Aug-2006
Meghal Spur	25	31-Jul-2016	01-Sep-2001
PIRDP	109	06-Nov-2019	30-Apr-1992
Ranigram Sirajganj	443	04-Nov-2019	30-May-1998
RBIP	1	27-Aug-2013	27-Aug-2013
Sailbari Revetment	11	17-Oct-2003	08-Sep-2001
Sailbari Revetment Down	23	13-Jul-2016	02-Oct-1998
Sailbari Revetment Up	43	13-Jul-2016	02-Oct-1998
Sariakandi Groyne	45	08-Aug-2016	29-Oct-2001
Simla Spur	13	11-Sep-2016	26-Oct-2003
Sirajganj Full River	81	11-Sep-2016	17-Jun-1998
Sirajganj Hard Point	1057	20-Dec-2016	06-May-1998
Subagacha Spur	9	04-Jul-2013	01-Sep-2001
West Guide Bund	160	20-Jul-2009	13-Apr-2004
Zaffarganj	11	24-Jun-2020	19-Jul-2016
Total	**2300**		

Table I 2 ADCP (Velocity) Survey Summary

Project	Transects	End Date	Start Date
Bachamara Zafarganj	12	26-Aug-2017	05-Aug-2016
Char Salimabad	11	26-Aug-2017	01-Aug-2017
Chauhali Down	22	22-Dec-2017	05-Aug-2016
Chauhali Middle	14	22-Dec-2017	05-Aug-2016
Chauhali Up	23	22-Dec-2017	06-Aug-2016
Enayetpur	20	22-Dec-2017	15-Oct-2016
Ganges	15	27-Aug-2017	06-Aug-2016
Harirampur Down	12	08-Aug-2017	07-Aug-2016
Harirampur Middle	13	08-Aug-2017	07-Aug-2016
Harirampur Up	21	19-Aug-2017	07-Aug-2016
Hurasagar	12	22-Dec-2017	01-Aug-2017
Jamuna Bridge Down	16	25-Aug-2017	04-Aug-2016
Mahespur	2	15-Oct-2016	15-Oct-2016
Nagarbari	15	26-Aug-2017	05-Aug-2016
Paturia	12	27-Aug-2017	18-Oct-2016
Sthal Chauhali	13	25-Aug-2017	15-Oct-2016
Zafarganj	26	21-Oct-2016	08-Aug-2016
Total	**259**		

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
19	Pilot works site visit report	ISPMC- FRERMIP- 581	12-Feb-2019
20	Review of clay cladding requirements for Kaijuri embankment	ISPMC- FRERMIP-583	17-Feb-2019
21	Proposed changes to grout mattress design	ISMPC-FRERMIP-595	11-March-2019
22	Analysis of erosion of the Upstream end of main protective work of Chauhali in February 2019 and future recommendations	ISPMC-FRERMIP 596	13- March-2019
23	Current status of riverbank protection at Zafarganj and Harirampur.	ISPMC-FRERMIP-626	17-Jul-19
24	Status of Riverbanks and Riverbank protection at Benotia, Chauhali, Harirampur and Zafarganj	ISPMC-FRERMIP-630	8-Aug-19
25	Initial performance assessment of pilot works	ISPMC-FRERMIP-686	7 Jun 20
26	Flood monitoring report 2019-20	ISPMC-FRERMIP-686	30 Jun 20

Appendix-K
Functions of the Office of Chief Engineer River Management

1. Background

Bangladesh is embarking upon a river stabilization program of substantial size. Investments in the order of USD 5 billion (around BDT 40,000 crore) are envisaged. Successful implementation of such mega projects requires adjustment of the institutional set-up for planning and implementation of these activities.

Overall river stabilization is a process characterized by considerable uncertainties pertaining to the unique characteristics and large size of the Brahmaputra System. These uncertainties impose the need for an approach characterized by flexibility, allowing to act at relatively short notice, learning from experience and continuously strengthening the knowledge base about river behaviour.

Zonal Chief Engineers have jurisdiction on a limited length of river reach and on one bank only. The establishment of the post of Chief Engineer River Management (CE-RM) reflects the importance of the main rivers as a separate hydrological region that have to be seen is a natural entity that must be coherently managed. A senior BWDB staff is needed for coordination of activities, implementation of river training works and development of specific knowledge relevant for river management.

2. Definition of the Office of the CE-RM

Pivotal in this structure is the establishment in BWDB of the office of CE-RM, with its assigned role of multidisciplinary planning, implementation, coordination, monitoring and knowledge accumulation. The position has now been approved by all relevant authorities and DG BWDB has appointed the first Chief Engineer River Management. This clears the way for appointment of the other staff to be assigned to this office.

The geographical scope of the office of the CE RM includes the Lower Ganges - Jamuna – Padma river system, with the exception of the Ganges up-stream of the future Ganges barrage which is under the Chief Engineer Ganges Barrage and the Lower Meghna Estuary which will be under the Chief Engineer Estuary and Coastal Zone Management.

The needs based organisational structure provides a first definition of the activities of the CE-RM as follows:

Box 1: Tasks of the CE RM as defined in the BWDB needs based organisational structure

- CE - RM will maintain in the archive the data and information of all the main rivers of Bangladesh. In this respect can take the assistance of hydrology and IWM.
- Will maintain the Satellite Image from CEGIS to do riverbank protection planning of the main rivers and will monitor the river survey.
- CE based on the recommendations the Technical Committee will inform the Director General about the River Management Plan and determine the site and arrange budget allocation.
- Will arrange stock piling of the blocks, geo-bag etc. in the area after identifying the most vulnerable area for protection of future river erosion.
- CE will monitor the activities undertaken for riverbank protection and in this respect will take action as per the directives of the Board.
- CE will implement the plan based on the recommendations of an Advisory Board. The Advisory Board can be structured with the representatives of the Water Resources Ministry, Relief and Disaster Management Ministry, BUET, CEGIS and Chief Engineer, Design and another expert from outside.
- The Technical Committee will be constituted with the Chief, Design, BIWTA-representative and external experts from, say, BUET, CEGIS etc.
- CE will prepare the river management 'Framework DPP'. Will arrange allocation from the budget, provide advance warning about river erosion and undertake monitoring activities.
- CE will update the 'Design Manual' used for river management and prepare and approve the guidelines for riverbank and erosion protection.

- BWDB will take all necessary actions to do planning and implementation of river dredging work.

Source: Office of the Staff Development, BWDB

The office of the CE-RM will include the following approved staff:

Table 1: composition of the Office of the Chief Engineer River Management

Designation	Number of staff
Chief Engineer River Management (civil)	1
Superintending Engineers (civil)	2
Executive Engineers (civil)	4
Sub-divisional Engineers (civil)	1
Assistant Engineers	5
Assistant Director (admin)	1
Senior Data Entry Operator	1
Upper Division Clerk	1
Senior Accounts Assistant	1
Data Entry Operator	1
Support staff (Drivers, Peons, Chowkidar)	8

Source: Office of the Staff Development, BWDB, April 2015

3. Proposed Organisation of the Office of the CE RM

Unprecedented river stabilization of a unique river system second to none in complexity requires a setup that is flexible and covers all aspects from planning to adaptation and maintenance. While implementation is best done reach-wise, planning, design, adaptation and maintenance are best done for the whole river system. Importantly, the river has to be seen as entity, not consisting of a right and a left bank, which would hamper well-coordinated, holistic stabilization works. Overall the proposed distribution of functions over the engineering staff is as follows:

<table>
<tr><td colspan="4">Chief - Engineer River Management</td></tr>
<tr><td colspan="2">SE (Contract Management)
(initially Lower Jamuna and Padma)</td><td colspan="2">SE (Planning, Monitoring and Adaptation)</td></tr>
<tr><td>XEN Design</td><td>XEN Contract Management</td><td>XEN Planning and Knowledge Management</td><td>XEN Monitoring and Adaptation</td></tr>
<tr><td>1 AE</td><td>1SDE
1 AE</td><td>1 AE</td><td>2 AE</td></tr>
</table>

At present the main project within the scope of work of the CE RM is the ADB-GON-GOB funded FRERMIP project covering the Lower Jamuna and Padma rivers. In view of the ambition of GOB for river stabilisation more projects of substantial size may be implemented in the future, particularly upstream of Bangabandhu Jamuna Bridge. The needs based Budget envisages the Office of the CE RM to comprise two Superintending Engineers with each SE supervising two Executive Engineers. At the moment that more projects of substantial size are planned and implemented the distribution of functions over the senior engineering staff in the office may be adjusted, for example adding an SE Central and Upper Jamuna.

3.1. Functions and tasks of the Chief Engineer

The CE RM has the overall responsibility for the management of the office, with the tasks as described in the needs-based organisational structure of BWDB. In addition to these formal tasks the CE RM will:

- Provide leadership and sense of direction for all activities of the unit and take appropriate measures for building team spirit for a dedicated and motivated workforce.

- Be responsible for staff development, to ensure that staff have the required skills and expertise.
- Be responsible for all financial matters delegated to the position by the Board and the Government and take care of all audit matters expeditiously
- Lead communication on river stabilization progress and achievements
- Undertake any other functions that may be assigned to him by the Board or the Government from time to time.

Additional considerations: relationship between CE-RM and Zonal Chief Engineers

River management will be a responsibility of both the CE-RM and the Zonal Chief Engineers concerned. The respective responsibilities are:

- The CE-RM is responsible for the overall planning of all interventions for river management, including knowledge generation and overall plan preparation.
- The Zonal Chief Engineers are responsible for the design, planning and implementation of the main river embankments and structures in the main river embankments, as well as for the operation and maintenance of the main river embankments including its structures.
- The CE-RM is responsible for the design, planning and implementation of all river training works, including the adaptation and maintenance of river training works of the main rivers.
- The zonal Chief Engineers will remain responsible for all river stabilization work of tributaries and distributaries, with the exception of offtake structures leading into distributaries and controlling flood flows.

3.2. Functions and tasks of the Superintending Engineers

For the current work load it is envisaged that one of the SE's will be the Project Director of the FRERMIP project, the other SE will be responsible for Planning, Monitoring an Adaptation.

The tasks and responsibilities of the SE's and XEN's are as follows:

3.2.1. SE (Project Management)

The SE Project Management will act as the Project Director of a major river stabilisation project (currently FRERMIP), with the following tasks:

- To be Project Director of FRERMIP.
- Prepare project budgets and work plans
- To ensure the quality of the designs made for the project.
- Approve contracts for the implementation of riverbank protection and river training works and the provision of services
- To monitor the implementation of activities for riverbank protection and river training works, including expenditure control and administrative matters
- Liaise with organisations relevant for the proper execution of the project, including the Task Force for Quality Control.
- Coordinate the implementation of project activities with other government agencies.

The SE Project Management will supervise two XEN's with the following tasks:

XEN Design

- Execute / organise field surveys as preparation for design work
- Prepare designs of physical works to be implemented
- Supervise the construction of the structures designed
- Prepare specific design manual elements and guidelines for main river designs
- Compile as-built drawings in an asset-management information system
- Design adaptation, repair and emergency works

XEN Contract Management

- Prepare bid documents and organise bidding for contracts for the construction of riverbank protection and river training works.
- Prepare and conclude contracts with contractors.
- Monitor the progress of project implementation
- Administer contract execution
- Recommend payment of contractors

3.2.2. SE Planning, Monitoring and Adaptation

The SE Planning, Monitoring and Adaptation has the following tasks:

- Be responsible for the planning of all River Management activities, and coordinate the activities of all BWDB units relevant for the management of the main rivers.
- Be responsible for formulation of Framework DPP, prepare proposal for block allocation of funds
- Plan, prepare, and implement all adaptation and emergency contracts on on-call-basis, and organize and maintain strategic stockpiles of construction materials at strategic locations.
- Annual update of erosion forecast and database incorporating prediction and monitoring, supported by periodic development incorporating lessons learned.
- Coordinate the collection of information from Zonal Chief Engineers relating to the status of flood risk management infrastructures (flood embankments), both under construction and completed.
- Maintain close coordination with the Planning, Implementation, O&M and other wings to ensure appropriate cross linkages between project planning, design, implementation and O&M activities relevant for interdisciplinary management of major benefit streams.
- Maintain coordination with relevant Government Departments and stakeholders on the planning and implementation of works for river management.
- Review projects and programmes and budgets for river management activities.
- Assist Zonal Offices to resolve engineering and coordination issues and problems related to river management.
- Establish a Knowledge management system

The SE Planning and Knowledge Management will supervise two XEN's with the following tasks:

XEN Planning and Knowledge Management

- Collection of information from Zonal Chief Engineers relating to the status of river management infrastructures, both under construction and completed.
- Prepare plans for riverbank protection and river training projects
- Coordinate plans with Zonal Chief Engineers
- Establish a data storage and retrieval system for essential river management information
- Prepare Framework DPP with required block allocations for river management activities.

XEN Monitoring and Adaptation

- Be responsible for preparation and updating the design manuals & guidelines for river training and river bank protection.
- To coordinate the necessary training programmes and staff development activities of personnel in his unit.
- Be responsible for regular monitoring of all the major rivers and maintain the data base with the assistance of some expert Organization like IWM. Prioritization of protection area will primarily be done through interpretation of satellite images by CEGIS and monitoring survey done by dedicated field divisions.

- Design and operate a monitoring system as follows:
  1. Full River Monitoring:
     1.1. Bathymetry, single beam (500m interval)
     1.2. ADCP (Discharge measurement)
     1.3. Float track
     1.4. Sediment sampling (ISPMC did not perform this survey yet, planned to do in 2018 flood season)
  2. Site Monitoring
     1.1 Bathymetry, single or multibeam
     1.2 Topography survey (Total station or Drone)
     1.3 Float track
     1.4 ADCP
     1.5 Status of infrastructures
- Adapt projects and programmes according to changing river characteristics and circumstances.
- Prepare plans for necessary adaptation works on the basis of monitoring information
- Prepare bid documents and contracts for the execution of adaptation works.
- Contract management and supervision of adaptation works.