12 2010-11

IMED-04
October 2011

Government of the People's Republic of Bangladesh

Ministry of Water Resources

27.10.11

Project Completion Report (IMED-04)
Of
JAMUNA MEGHNA RIVER EROSION MITIGATION PROJECT (JMREMP)
ADB Loan No. -1941 BAN (SF)

Bangladesh Water Development Board

Project Director
PMO-JMREMP, BWDB, Dhaka

Government of the People's Republic of Bangladesh
Ministry of Planning
Implementation Monitoring and Evaluation Division

PROJECT COMPLETION REPORT : IMED 04/2003 (Revised)

A. PROJECT DESCRIPTION :

01. Name of the Project **: Jamuna-Meghna River Erosion Mitigation Project (JMREMP) [ADB Loan No. 1941-BAN(SF)]**

02. Administrative Ministry/Division : Ministry of Water Resources (MoWR)

03. Executing Agency : Bangladesh Water Development Board

04. Location of the Project :

Division	District	Upazila
1	2	3
Rajshahi	Pabna	Bera
Rajshahi	Sirajganj	Shahjadpur
Chittagong	Chandpur	Matlab

05. Objective of the Project : *The project has several objectives.*

- General objective is to promote sustained economic growth, poverty reduction, and livelihood security in areas threatened by progressive riverbank erosion. Its specific objective is to establish safeguard for the two FCDI schemes namely Pabna Irrigation and Rural Development Project (PIRDP) and Meghna-Dhonagoda Irrigation Project (MDIP) against risk of river erosion by adopting appropriate structural and non-structural mitigation measures and thereby secure agricultural and fisheries development and sustain future benefit to accrue from these development. At the same time, the project aims at enhancing capacity of local people to cope with disaster; substantially improve the social and economic condition of the poor people living along the embankment in the above subproject areas.

- Other objectives of the project is to develop a sustainable, low cost and effective erosion protection work model, construction method and planning and implementation approach suitable for dynamic morphological condition of the major rivers, pilot testing these design and approach in the two subproject areas for future replication else where in the country; development of suitable organization structure; enhance capacity of BWDB staff in technical and management aspect of river erosion.

06. Estimated Cost :

(In lakh Taka)

	Original	Latest Revised
(a) Total	37549.81	43353.08
(b) Taka	12858.73	14573.97
(c) Foreign Currency	11098.08	13789.10
(d) Project Aid	24691.08	28779.11
(e) RPA	13593.00	14990.01

07	Date of Approval	:	PCP	PP
	(a) Original	:		October 2002
	(b) Latest Revised (Re-appropriation)	:		April 2011

08. Implementation Period :

	Date of Commencement	Date of Completion
(a) Original	2002-2003	2008-2009
(b) Latest Revised	2002-2003	2010-2011
(c) Actual	2002-2003	2010-2011

09. Financing Arrangement (Source-wise) :

9.1 Status of Loan/Grant

a) Foreign Financing :

Source (s)	Currency as per Agreement	Amount in US $ (Million)	Nature (Loan/Grant/ supplier's/ credit)	Date of Agreement	Date of Effective -ness	Date of Closing	
						Original	Revised
1	2	3	4	5	6	7	8
ADB	SDR 31975000	US$ 4.20	Loan	3 February 2003	1 April 2003	30 June 2009	30 June 2011

b) GOB :

(In lakh Taka)

Total amount	Loan	Grant	Cash Foreign Exchange
1	2	3	4
14573.97		Grant	

9.2 Utilization of Project Aid : (Source wise)

(In million)

Source (s)	Total Amount		Actual Expenditure		Unutilized Amount	
	In US $	In Local Currency	In US $	In Local Currency	In US $	In Local Currency
1	2	3	4	5	6	7
ADB	41.439	2877.911	40.779	2832.133	0.925	45.778

1US $=69.45

9.3 Re-imbursible Project Aid (RPA) :

(In lakh Taka)

R P A Amount		Amount Spent	Amount Claimed	Amount Re-imbursed	Remarks
As per PP	**As per Agreement**				
1	**2**	3	4	5	6
14990.01		14526.96	14526.96	14526.96	

B. IMPLEMENTATION POSITION

01. Implementation Period :

Implementation Period as per PP		Actual Implementation period	Time Over-run (% of original implementation period)	Remarks
Original	Latest Revised			
1	2	3	4	5
2002-03 to 2008-09	2002-03 to 2010-11	2002-03 To 2010-11	28.57 %	

02. Cost of the Project :

(In lakh Taka)

Description	Estimated Cost		Actual expenditure	Cost over-run (% of original cost)	Remarks
	Original	Latest revised			
1	2	3	4	5	6
TOTAL	37549.81	43353.08	42685.20	5135.39 (13.68 %)	
TAKA	12858.73	14573.97	14363.87	1505.14 (11.70 %)	
PA	24691.08	28779.11	28321.33	3630.25 (14.70)	

03. Project Personnel :

Sanctioned strength as per PP	Manpower employed during execution	Status of the existing manpower			Manpower Employed	
		Manpower requirement for O&M as per pp	Existing manpower for O & M	Others		
1	2	3	4	5	Male	Female
Officer(s)= 42	33	-	8			
Staff(s) = 57	32	-	10			
Total : 99	65	-				

04. Training of Project Personnel (Foreign/Local) :

Field of Training /Study tour/workshop/Seminer etc.	Provision as per PP		Actual Number of person		Remarks
	Number of person	Man - months	Number of person	Man - months	
1	2	3	4	5	6
A. Foreign					
1. Study tour to Mississipppi river flood control and bank protection works in Lousiana/ Mississippi under US Army Corps.	08	2.66	08	2.66	Capacity Development Plan
2. 2nd International Conference as river 07 on river and flood plain Management in Kuching, Malaysia..	2	0.46	2	0.46	
3. Study Tour to Mississippi, USA/Australia- Use of Geo-textile based Syestem	3	0.40	3	0.40	
4. International Seminar on scour and erosion in the Netherlands	3	0.40	3	0.40	
5. Staff Training in Irrigation Water Management in South-East or South Asia	16	3.73	20	4.66	
B. Local					
1. Comprehnsive WMG strengthening/On-site training on cooperative rules and regulation	3200	533	Total-2547 Male-2148 Female-399	424	
2. Environmental awareness program	36	3.6	Total-25 Male-22 Female-03	2.50	
3. Land Use Survey training for both staffs of BWDB/DoC and beneficaries of the project (member of WMCSs)	210	35	Total-210 Male-200 Female-10	35	
4. Tarining on Bye –law drafting committee for Executive members of WMCSs	241	24	Total-270 Male-250 Female-20	27	
5. Womens training on Poultry rearings	2100	140	Total-1500 Male-1085 Female-415	100	
6.Training of ISC collectors on collection of ISC and its proper management	1400	46	Total-1400 Male-1399 Female-01	46	
7.Training on participatory O & M irrigation	400	26	Total-240 Male-200 Female-40	16	
8. Womens training on organizational and leadership development	570	38	Total-570 Male-00 Female-570	38	

9. Fisheries training for members of WMCSs	200	13	Total-120 Male-100 Female-20	8	
10. PMO Engineers on-job training (under the sub head of On the Job training of REMS Staffs)	5	5	Total-03 Male-03	3	
11. Workshop with LGI & partner agencies	25	1.66	Total-25 Male-20 Female-05	1.66	
12. Workshop accelerating of WMOs	23	1.86	Total-23 Male-20 Female-03	1.86	
13. Womens training on home gardening	650	43	Total-567 Male-00 Female-567	43	
14. Tailoring training of members of WMCSs under of Womens training on IGA	100	3.33	Total-60 Male-00 Female-60	2	
15. Training on meodern cultivation of Boro Rice	500	33	Total-218 Male-218 Female-00	14.53	
16. Preparation & Use of organic manure for improvement of soil health	500	33	Total-116 Male-116 Female-00	8	
17. Training on Seed production demonstration	160	11	Total-68 Male-68 Female-00	5	

05. Component-wise Progress (As per latest approved PP) :

(In lakh Taka)

Items of work (as per PP)	Unit	Target (as per PP)		Actual Progress		Reasons for deviation (±)
		Financial	Physical (Quantity)	Financial	Physical (Quantity)	
1	2	3	4	5	6	7
ADB Service charge	LS	829.72	LS	829.32	LS	
Training/Study Tour	LS	235.00	LS	198.02	LS	
Re-Settlement Program (NGO Service)	LS	297.18	LS	284.54	LS	
Disaster Preparedness	LS	76.63	LS	73.58	LS	
Consultancy Services : Part A	Man month	479.67	Local : 47 mm Expt: 22 mm	479.67	Local : 47 mm Expt: 22 mm	
Consultancy Services : Part B	Man month	2541.08	Local: 648.82 mm Expt : 95.77 mm (Appendix-3 & 4)	2541.15	Local: 630.82 mm Expt : 95.77 mm (Appendix-3 & 4)	

Consultancy Services : Part C	Man month	76.55	Local : 13 mm Expt : 2.5 mm	76.55	Local : 13 mm Expt : 2.5 mm	
Social Development for Erosion Affected Poor People (through JFPR Fund)	LS	613.00	LS (Appendix-5)	586.18	LS	
Survey Modelling and Monitoring & information Management	LS	547.00	LS	546.97	LS	
PMO office expenses	LS	604.00	LS	555.78	LS	
Contingency	LS	110.00	LS	108.42	LS	
Overhead Cost	LS	550.00	LS	550.00	LS	
Sub-Total : Revenue Comp.		6959.83		6930.18		
Transport vehicle						
Survey & Office Equipment	LS	354.20	LS	198.97	LS	
Land Acquisition	ha	1367.37	114.54 ha (PIRDP- 74.54 ha MDIP-40.00ha	1312.95		
Construction of Bank Protection and anciliary Works	km	31950	28.44 km (PIRDP: 17 km MDIP: 11.44 km	31948.61	28.44 KM (PIRDP: 17 km MDIP: 11.44 km)	
O&M during Construction	LS	290	LS	287.34	LS	
Secondary defence Line	km	271.68	1.25 km	271.68	1.25 km	
Rehabilitation of MDIP Embankment at weak reaches	km	310.00	7.00 km	254.22	5.82 km	
Improvement of Irrigation Infrastructure	LS	1850.00	LS	1581.25	LS	
Cost Escalation						
Sub Total : Capital Comp.		36393.25		35855.02		
Grand Total(a+b)		43353.08		42685.20		

06. Information regarding Project Director (s) :

Name & Designation with pay Scale.	Full time	Part time	Responsible for more than one project	Date of		Remarks
				Joining	Transfer	
1	2	3	4	5	6	7
1. Sharif Rafiqul Islam a) Project Director/SE Scale: 10700-300x8-13100	Full time			22-2-2000	30-1-2003	
b) Project director/ACE Scale: 11700-300x6-13500	Full time			30-1-2003	31-3-2004	
2. Md. Sharif –al-Kamal a) Project Director/SE Scale: 15000-600x8-19800	Full time			31-3-2004	18-1-2006	
b) Project director/ACE Scale: 16800-650x6-20700	Full time			19-1-2006	28-12-2006	
3. Md. Makbul Hossain a) Project Director/SE Scale: 15000-600x8-19800	Full time			28-12-2006	12-2-2008	
b) Project director/ACE Scale: 29000-1100x6-35600	Full time			13-2-2008	20-5-2009	
c) Project director/CE Scale: 33500-1200x5-39500	Full time			21-5-2009	23-8-2009	
4. Ahsanul Alam a) Project Director/ACE Scale: 29000-1100x6-35600	Full time			23-8-2009	28-2-2010	
5. Md. Abdul Quddus a) Project Director/SE Scale: 25750-1000x8-33750	Full time			28-2-2010	30-6-2011	

07. Procurement of Transport (in Nos.) :

Type of transport	Number as per P.P.	Procured with date	Transferred to Transport Pool with date	Transferred to O & M with date	Condemned/damaged with date	Remarks
1	2	3	4	5	6	7
Car	-	Not Applicable as no transport purchased				No transport purchased
Jeep	-					
Microbus	-					
Minibus	-					
Bus	-					
Pick-up	-					
Truck	-					
Motor Cycle	-					
By-cycle	-					
Speed Boat	-					
Launch	-					
Others with name	-					

08. Procurement of Goods, Works and Consultancy Services:

08.1 Goods & Works of the Project costing above Tk. 200.00 lakh. and Consultancy above Tk. 100.00 lakh :

Description of Procurement (goods/works/consultancy) as per bid document	Tender/Bid/Proposal Cost (in crore Taka)		Tender/Bid/Proposal Cost		Date of completion of works/services and supply of goods	
	As per PP	Contracted value	Invitation date	Contract signing/LC opening date	As per contract	Actual
1	2	3	4	5	6	7
WORKS						
A. PIRDP						
1. Reinforcing of existing bank protection works along Jamuna river at PIRDP from km. 88.600 to km. 91.00. Bank protection works from km. 90.900 to km. 91.200 and mas dumping from km. 91.00 to km. 91.500 under JMREMP under Bera O&M division, Pabna-2003-04 (P-1/2003)	9.00	9.80	01.12.03	04.03.04	06.07.04	06.07.04
2. Riverbank and wave protection by dumping and/or placing sand filled geo-textile bags at PIRDP (P-3/2005)	8.79	5.54	13/01/05	03/08/05	06/03/06	6.3.06
3. Construction of closure dam across chute channel, riverbank slope protection by concrete filled grout mattress & engineers site facilities at Koitala, PIRDP (P-4/2005)	4.76	4.00	13/01/05	19/04/05	30/07/05	30.7.05
4. Construction of riverbank slope protection by placing dumping cement concrete blocks and geo-textile bags from Koitala to Harirampur at PIRDP (P-5/2005)	9.18	8.68	26/10/05	23/02/2006	22/08/06	22.8.06
5. Construction of riverbank slope protection by placing dumping cement concrete blocks and geo-textile bags from Harirampur to Penchakhola at PIRDP (P-6/2006)	9.26	8.7	10/10/06	08/03/07	30/06/08	30.6.08
6. Construction of riverbank slope protection by placing dumping cement concrete blocks and geo-textile bags from Penhakhola at PIRDP (P-7/2006)	9.26	8.48	11/10/06	08/03/07	30/06/08	30.6.08
7. Slope protection of embankment by CC block including construction of surface drainage outlet structure and riverbank protection work by dumping of sand filled geo-textile bags including supplementary dumping and flood standby from Koitala to Mohanganj at PIRDP (P-8/2007)	5.65	4.62	28/10/07	12/02/08	12/02/09	12.2.09
8. Riverbank protection by dumping of sand filled geo-textile bags from N 673600 to N 670750 along the right bank of Jamuna river at PIRDP under JMREMP (P-9/2008)	6.48	4.98	16/10/08	07/05/09	28/02/10	28.2.10
9. Riverbank protection by dumping of sand filled geo-textile bags from N 670750 to N 668050 including supplementary dumping of geo-textile bags from N 654000 to N 661000 along the right bank of Jamuna river at PIRDP under JMREMP (P-10/2008)	6.99	4.80	16/10/08	07/05/09	28/02/10	28.2.10
10. Riverbank slope protection by placing and dumping concrete blocks and sand filled geo-textile	11.88	10.68	19/08/09	10/01/10	31/05/11	31.05.11

Description of Procurement (goods/works/consultancy) as per bid document	Tender/Bid/Proposal Cost (in crore Taka)		Tender/Bid/Proposal Cost		Date of completion of works/services and supply of goods	
	As per PP	Contracted value	Invitation date	Contract signing/LC opening date	As per contract	Actual
1	2	3	4	5	6	7
bags from N 673500 to N 672000 and in between 654500 to N 661000 along the right bank of Jamuna river at PIRDP under JMREMP (P-11/2009)						
11. Riverbank slope protection by placing and dumping concrete blocks and sand filled geo-textile bags from N 672000 to N 670250 along the right bank of Jamuna river at PIRDP under JMREMP (P-12/2009)	11.78	11.09	13/04/10	11/07/10	31/05/11	31.5.11
12. Riverbank slope protection by placing and dumping concrete blocks and sand filled geo-textile bags from N 670250 to N 668250 along the right bank of Jamuna river at PIRDP under JMREMP (P-13/2009)	11.88	11.06	19/08/09	13/01/10	31/05/11	20.6.11
13. Riverbank protection work by dumping/placing of sand filled geo-textile bags from N 668050 to N 664100 and N 673890 to N 673600 along the right bank of Jamuna river at PIRDP under JMREMP (P-14/2010)		6.60	13/04/10	08/07/10	28/02/11	31.03.11
14. Riverbank slope protection by placing and dumping concrete blocks and sand filled geo-textile bags from N 668250 to N 666280 along the right bank of Jamuna river at PIRDP under JMREMP (P-15/2010)	11.99	10.85	13/04/10	11/07/10	31/05/11	31.5.11
15. Riverbank slope protection by placing and dumping concrete blocks and sand filled geo-textile bags from N 666280to N 664300 and N 673790 to N 673500 along the right bank of Jamuna river at PIRDP under JMREMP (P-16/2010)	11.99	10.70	13/04/10	11/07/10	31/05/11	31.5.11
16. Construction of cut-off wall, Ferro-cement sheet lining & strengthening of I_3 S_1 canal left dyke from Km. 2.550 to Km. 4.650 at PIRDP under Bera O&M Division, BWDB, Bera, Pabna during the year 2010-2011. Contract Package No. JMREMP/W-01/2010	4.14	3.56	08-09-10	23-12-11	29-03-10	25-06-11
B. MDIP						
1. Riverbank and wave protection by dumping and/or placing sand filled geo-textile bags and concrete blocks against (M-1/2003)		9.84	01/12/03	04/03/04	06/06/04	31-06.04
2. Riverbank and wave protection by dumping and/or placing sand filled geo-textile bags at MDIP (M-16/2005)		2.76	13/01/05	05/05/05	16/10/05	16.10.05
3. Construction of riverbank slope protection by placing and dumping of cement concrete blocks and geo-textile bags from Ekhlaspur to Doshani (2.65 km) at MDIP (M-18/2005)		8.61	26/10/05	22/03/06	01/09/06	01-09-05
4. Construction of riverbank slope protection work		7.42	28/10/07	01/04/08	14/08/09	14-08-09

Description of Procurement (goods/works/consultancy) as per bid document	Tender/Bid/Proposal Cost (in crore Taka)		Tender/Bid/Proposal Cost		Date of completion of works/services and supply of goods	
	As per PP	Contracted value	Invitation date	Contract signing/LC opening date	As per contract	Actual
1	2	3	4	5	6	7
by placing dumping CC blocks and geo-textile bags at Doshani and Mohanpur- Ekhlaspur including construction of a goodown at Udumidi at MDIP (M-19/2007)						
5. Riverbank protection by dumping sand filled geo-textile bags at Amirabad, Charmasua, Gazipur, Thetalia, Enayatnagar, Torki, Shibpur and Kalirbazar along the right banks of Dhonagoda river at MDIP (M-20/2007)		6.39	31/10/07	10/04/08	23/08/09	23-08-09
6. Construction of riverbank slope protection by placing and dumping cement concrete blocks and geo-textile bags at Amirabad, Charmasua and Gazipur along the right bank of Dhonagoda river at MDIP (M-21/2007)		7.67	31/10/07	13/04/08	26/08/09	26-08-09
7. Construction of riverbank slope protection by placing and dumping cement concrete blocks and geo-textile bags at Thetalia, Enayatnagar, Torki, Shibpur and Kalirbazar along the right bank of Dhonagoda river at MDIP (M-22/2007)		6.87	31/10/07	15/04/08	28/08/09	28.08.09
8. Strengthening of Irrigation Canal U1 from km. 0.00 to km. 3.00, U2 from 0.00 to km. 3.00, U12 from km. 0.00 to 1.75, U13 from km. 0.00 to km. 1.50, U3 from km. 0.00 to km. 3.00 U11 form km. 0.00 to km. 1.50, DU1-S from km. 0.00 to km. 0.970, DU1 from km. 0.00 to km. 1.460, DU1-2 from km. 0.00 to km. 1.550, and Ferro cement sheet lining in U11 in between k. 1.120 to km. 1.480, U12 in between km. 0.00 to km. 1.75 of MDIP under JMREMP at Meghna-Dhonagoda O&M division, BWDB, Chandpur during the year 2010-2011. Contract Package No. JMREMP/W-03 IC/2010.	2.97	2.44	14-12-10	07-04-11	28-06-11	28-06-11
9. Strengthening of Irrigation Canal K2 from km. 0.800 to km. 2.80, K21 from 0.00 to km. 3.50, K12 from km. 1.00 to 4.70, K22-1 from km. 0.00 to km. 0.550, K22-2 from km. 0.00 to km. 0.800. Ferro cement sheet lining in K22-2 from km. 0.00 to km. 0.300, K22-1 from km. 0.00. MDIP under JMREMP at O&M division, BWDB, Chandpur during the year 2010-2011. Contract Package No. JMREMP/W-04 IC/2010.	3.81	3.51	14-1210	12-04-11	28-06-11	28-06-11

Description of Procurement (goods/works/consultancy) as per bid document	Tender/Bid/Proposal Cost (in crore Taka)		Tender/Bid/Proposal Cost		Date of completion of works/services and supply of goods	
	As per PP	Contracted value	Invitation date	Contract signing/LC opening date	As per contract	Actual
1	2	3	4	5	6	7
Goods: **Geo-textile Bags**						
1. Supply of Geo-textile bag against contract package no. G-1/2002/ Supply of Geo-textile bag.		4.24	23/09/02	09/08/03	15/03/03	15.03.03
2. Procurement of Geo-textile bags following international shopping method of procurement contract package no. G-2/2004/IS/ Supply of Geo-textile bag		BDT 0.09 crore & US$ 466,750	17/03/05	08/06/05	7 week from opening LC	26/01/06
3. Procurement of Geo-textile bags following international competitive bidding method of procurement contract package no. G-2/2004/Re-bid/ Supply of Geo-textile bag.		BDT 0.47 crore & US$ 2786,835	17/03/05	11/09/05/ 29/09/05	16 week from opening LC	26/01/06
4. Procurement of Geo-textile bags following international competitive bidding method of procurement for Lot-1 contract package no. G-5/2006/Re-bid/ Lot-1 Supply of Geo-textile bag. .		BDT 0.41 crore & US$ 967,500	17/01/07	22/08/07	16 week from continuation of the LC	13/04/08
5. Procurement of Geo-textile bags following international competitive bidding method of procurement for Lot-2 contract package no. G-5/2006/Re-bid/ lot-2 Supply of Geo-textile bag.	Tk. 15.36	BDT 0.44 crore & US$ 1199,000	17/01/07	22/08/07/ 09/10/07	16 week from continuation of the LC	02/01/08
6. Procurement of Geo-textile bags following international competitive bidding method of procurement for contract package no. G-6/2007/ Supply of Geo-textile bag.	Tk. 15.19	BDT 0.13 crore & US$ 2338,000	10/12/07	15/07/08/ 17/06/08	12 week from confirming of the LC	07/10/09
7. Procurement of Geo-textile bags following international competitive bidding method of procurement for contract package no. G-7/2008/ Supply of Geo-textile bag.	Tk. 36.63	BDT 0.28 crore & US$ 3929,000	14/09/08	02/06/09/ 17/06/09	24 week for the date of confirming of the LC	24/12/09
8. Procurement of Geo-textile bags following international competitive bidding method of procurement for contract package no. G-8/2010/ Supply of Geo-textile bag.	Tk. 15.73	BDT 0.23 crore & US$ 2220,000	08/04/10	31/08/10/ 03/10/10	20 week for the date of confirming of the LC	11/03/11

CONSULTANCY						
1. Consultancy services for JMREMP, part-B, Capacity Development and Project Management	30.00	23.84	31/10/02	26/4/04	30/06/10	30/06/10
2. Consultancy services for JMREMP, part-B, Capacity Development and Project Management for Extended period	1.50	1.22	22/07/10	26/08/10	30/06/11	30/6/11

8.2 Use of Project Consultant (s) (Foreign/Local):

Name of the Field	Approved man month		Actual man month utilised	Remarks
	As per PP	As per contract		
1	2	3	4	5
1. Consultancy Services Part-A				
Foregn	22 mm	22 mm	22 mm	
Local	47 mm	47 mm	47 mm	
1. Consultancy Services Part-B				
Foregn	95.77 mm	95.77 mm	95.77 mm	
Local	648.22 mm	648.22 mm	630.82 mm	
1. Consultancy Services Part-C				
Foregn	2.50 mm	2.50 mm	2.50 mm	
Local	13.00 mm	13.00 mm	13.00 mm	

09. Construction/Erection/Installation Tools & Equipment:

Description of items	Quantity (as per PP)	Quantity procured with date	Transferred to O & M with date	Disposed off as per rule with date	Balance	Remarks
1	2	3	4	5	6	7
No Construction/Erection/Installation Tools & Equipment etc were procured						

C. FINANCIAL AND PHYSICAL PROGRAMME :

01. (a) Original and revised schedule as per PP :

(In lakh Taka)

Financial Year	Financial provision & physical target as per original PP				Financial provision & physical target as per latest revised PP			
	Total	Taka	P.A.	Physical %	Total	Taka	P.A.	Physical %
1	2	3	4	5	6	7	8	9
2002-03	9319.39	3447.07	5875.32	25 %	419.80	307.10	112.70	1 %
2003-04	8263.36	3020.79	5242.57	22 %	5282.6	1468.90	3813.70	12 %
2004-05	8471.22	2881.37	5589.85	23 %	3657.10	1216.80	2540.30	9 %
2005-06	2873.90	975.04	1898.87	8 %	4479.30	1142.90	3336.40	10 %
2006-07	3694.49	1229.68	2464.81	10 %	2122.14	759.87	1362.27	5 %
2007-08	2643.15	686.67	1956.48	8 %	5476.58	1511..05	3965.53	13 %
2008-09	2284.29	621.11	1663.18	6 %	5619.25	1154.25	4465.00	13 %
2009-10 (1st Revised)					6039.98	988.80	5051.18	14 %
2010-11 (2nd Revised)					10256.33	6024.30	4232.03	23 %

01. (b) Revised ADP allocation and progress :

Financial	Revised Allocation & target				Taka release	Expenditure & physical progress			
Year	Total	Taka	P.A	Physical %	Release	Total	Taka	P.A	Physical %
1	2	3	4	5	6	7	8	9	10
2002 - 03	1300.62	365.00	935.62	3.00	356.00	496.17	364.71	131.46	1.50
2003 -04	7900.00	4700.00	3200.00	18.00	1470.00	5241.32	1468.92	3772.40	12.00
2004 -05	8260.00	1500.00	6760.00	19.00	1112.03	3279.42	1108.67	2170.75	8.00
2005 -06	4500.00	1200.00	3300.00	10.00	1187.17	4465.00	1183.74	3281.34	10.50
2006 -07	5600.00	2100.00	3500.00	13.00	897.75	2415.05	769.53	1645.52	6.00
2007 -08	10244.00	1225.00	9019.00	23.00	1978.40	5485.48	1511.05	3974.43	12.00
2008 -09	5820.00	1300.00	4520.00	13.00	1202.88	5674.25	1154.25	4520.00	13.00
2009 -10	7105.00	956.00	6149.00	16.00	989.00	6039.99	988.80	5051.19	14.00
2010 -11	9722.00	5880.00	3842.00	23.00	5880.00	9588.45	5814.20	3774.25	23.00

D. ACHIEVEMENT OF OBJECTIVES OF THE PROJECT :

Objectives as per PP	Actual achievement	Reasons for shortfall, if any
a) General objective is to promote sustained economic growth, poverty reduction, and livelihood security in areas threatened by progressive riverbank erosion.	- The Project achieved sustainable economic growth in both Pabna Irrigation and Rural Development Project (PIRDP) and Meghna-Dhonagoda Irrigation Project (MDIP) area. - Reduces poverty in two sub-projects areas. - Secured livelihood by protecting river bank erosion in both PIRDP & MDIP	No short fall
b) Its specific objective is to establish safeguard for the two FCDI schemes namely Pabna Irrigation and Rural Development Project (PIRDP) and Meghna-Dhonagoda Irrigation Project (MDIP) against risk of river erosion by adopting appropriate structural and non-structural mitigation measures and thereby secure agricultural and fisheries development and sustain future benefit to accrue from these development	- The project completed 17.00 km bank protection work at Jamuna river and 11.44 km bank protection work at Meghna & Dhonagoda river and established a safeguard in both PIRDP & MDIP. - The bank protection works secured agricultural and fisheries development and sustain future benefit.	No short fall
c) At the same time, the project aims at enhancing capacity of local people to cope with disaster; substantially improve the social and economic condition of the poor people living	The people living along the embankment in the above two subproject areas were trained on disaster prepeardness, fisheries , co-operatives, Income Generating training (Home gardening, Tailoring, poultry rearing,	No short fall

along the embankment in the above subproject areas.	goat rearing, beef fattening,) leadership development for woman members, participatory O & M training, Seed production and its management etc. These trainings enhances the capacity of local people to cope with disaster; substantially improve the social and economic condition of the poor people living along the embankment in the above subproject areas.	
e) Other objectives of the project is to develop a sustainable, low cost and effective erosion protection work model, construction method and planning and implementation approach suitable for dynamic morphological condition of the major rivers, pilot testing these design and approach in the two subproject areas for future replication else where in the country; development of suitable organization structure; enhance capacity of BWDB staff in technical and management aspect of river erosion.	- JMREM Project implemented 28.44 km bank protective works costing Tk 31948.61 lakh ie Tk 1123.36 lakh per km along the bank of Jamuna & Meghna river. The cost of bank protective works in other projects varies from 3500.00 lakh to 5000.00 lakh per km. along the bank of Jamuna & Meghna. Thus JMREMP developed a sustainable, low cost and effective erosion protection work model. - JMREMP establishes a Design guide line and methodology. - The a Design guide line and methodology were tested in two subproject areas for future replication else where in the country. - JMREMP enhances capacity of BWDB staff in technical and management aspect of Design guide line and methodology in river erosion.	No short fall

E. BENEFIT ANALYSIS

01. Annual Out-put:

Items of out-put	Unit	Estimated quantity expected at full capacity	Actual quantity of out-put during the 1st year of operation at full capacity (or during, real production for newly completed project).
(a) 28.44 km of new bank protective work along the river bank of Jamuna and Meghna for protection of PIRDP & MDIP from erosion of those two rivers.	km	28.44km	28.44 km (Physical Progress is 100 %)

02. Cost / Benefit :

Item	Estimated	Actual
(1) Benefit cost ratio of the project		
(i) Financial	1.30 : 1.00	
(ii) Economic	1.66 : 1.00	1.24: 1.00
(2) Internal Rate of Return		
(i) Financial	16.79 %	
(ii) Economic	21.57 %	27.00 %

03. Please give reasons for shortfall, if any, between the estimated and actual benefit: Not Applicable

F. MONITORING AND AUDITING

0.1 Monitoring:

Name & designation of the inspecting official	Date of Inspection	Identified Problems	Recommendations
1	2	3	4
a) Ministry/ Agency			
1. Mr. Ramesh Chandra Sen Minister, MoWR, Bangladesh	4/12/2010	Not found	All works of the project to be completed within June 2011
2 .Mr. Md. Azizul Haque ADG(Western), BWDB, Dhaka	4/12/2010	Not found	All works of the project to be completed within June 2011
3. Inter Ministrial Committee. a) Ms. Rkkshana Begom,DG, IMED b) Mr. Zahid Hossain, Director, IMED c) Mr. Nurul Haque Mazumdar, DS, MoWR d) Mr. Dayananda Devenath, Deputy Director, IMED and others	18/7/2007 to 19/07/07	Not found	Inter ministrial committee visited PIRDP & MDIP project site and submitted report after verification of different component for DPP revision
4. Sharif Rafiqul Islam Project Director, . JMREMP	Several times		Whatever issues were fornd during visits, solved during project period.
.5. Md. Sharif –al-Kamal Project Director, . JMREMP	Several times		Whatever issues were fornd during visits, solved during project period.
6. Md. Makbul Hossain Project Director. JMREMP	Several times		Whatever issues were fornd during visits, solved during project period.
7. Ahsanul Alam Project Director. JMREMP	Several times		Whatever issues were fornd during visits, solved during project period.
. 8. Md. Abdul Quddus, Project Director. JMREMP	Several times	Not found	Visited PIRDP & MDIP project sites. Utmost efforts should be given so that project could be completed within schedule time
. 9. Md. Abul Kalam Azad, SE, Pabna	Several times		Whatever issues were fornd during visits, solved during project period.
. 10. Md. Shahidur Rahman, SE, Chandpur.	Several times		Whatever issues were fornd during visits, solved during project period.
. 11. Mr. Md. Ali Akbar, SE, Pabna O & M Circle, BWDB, Pabna	Several times	Not found	All works of the project to be completed within June 2011
12. Md. Aftab Uddin Ahmad, SE, Chandpur	Several times	Not found	All works of the project to be completed within June 2011
b) IMED			
1. Mr. Rabindranath Barman, Director, IMED	11/11/10 & 28/11/10	i) Damages of slope pitching works at Charmasua, Amirabad, & Ekhlaspur under MDIP ii) Delay of supplying geobag iii) Insufficient allocation in ADP	-Action to be taken for immediate repairing of damages - Supplying of geobag in time - Allocation of Tk 32.00 cror additional fund in RADP for completion of project within June 2011

c) Others (Please Specify) :			
1. 5 (five) member Indian deligate with 4 member ADP exparts visit Koijhuri, Shajadpur, Sirajganj JMREMP site. The list of participants is as below: i) Mr. P.K. Patnaik, Joint Secretary, Ministry of Development of North East Region ii) Mr. L.K. Taneja, Sr. Joint Commissioner, MoWR iii) Mr. P. Kumar, Deputy Director, CWC iv) Mr. R. Khattar, Deputy Director, CWC v) Mr. G. Kalita, Executive Engineer, Water Res Dept, Assam From ADB: i. Mr. K. Yokoyama, Pr. Water Res Management Specialist ii. Ms. N. Totsuka, Water Res Management iii. Mr. Knut Oberhagemann iv. Mr. Mukhles uz zaman	16/4/2010	Found no problem	The deligate visited Koijhuri, Shajadpur, Sirajganj JMREMP site at PIRDP for knowledge sharing about JMREMP Methodolodgy of bank revetment works along the bank of Jamuna river

0.2. Auditing during and after Implementation:

2.1. Internal Audit :

Period of Audit	Date of submission of Audit Report	Major findings/ objections	Whether objections resolved or not.
1	2	3	4
Not applicable			

2.2. External Audit:

Period of Audit	Date of submission of Audit Report	Major findings/ objections	Whether objections resolved or not.
1	2	3	4
2002 -2003 (21-2-04 to 24-2-04)	236/FAPAD/S-1/ADB 2002-2003/27 dt. 8-3-04	3 Nos. Para	3 Nos dropped
2003-2004 (09-09-04 to 01-11-04	241/FAPAD/S-1/ADB 2003-2004 dt.2-3-05	8 Nos. Para	8 Nos. dropped
2004 -2005 ((21-12-05 to 13-2-06	255/FAPAD/S-1/56 dt. 30-3-2006	7 No. Para	6 Nos. dropped Para 2.07 Unsettled
2005-2006 2-11-06 to 3-12-06	271/FAPAD/ 127 dt. 13-02-07	4 Nos. Para	2 Nos.dropprd 2 Nos. para P/.A.Committee (Para. 2.01,2.02)
2006-2007 (2-3-08 to 04-03-08)	293/FAPAD/ 2006-2007 378 dt.10-3-2008	8 Nos.Para	3 Nos. dropped 1 No. Para P.A Committee (Para 2.02). Unsettle, Para Nos. 2.03,2.04,2.07.
2007-2008 (02-02-09 to 16-03-09	305/FAPAD/S-1/ADB 2007-2008 dt. 31-03-09	2 Nos. Para	2 Nos. dropped
2008-2009 23-01-10 to 27-01-10	336/FAPAD/2008-2009 dt. 30-03-2010	1 No. Para	1 No. dropped
2009-2010	336/FAPAD/2009-2010 dt.21-03-11.	5 Nos. Para	2 Nos. dropped.

03-01-2011 to 01-02-2011			
2010 -2011 dt. 14-09-2011 to 19-09-2011	Audit Report not submitted		

G. DESCRIPTIVE REPORT

1. General Observations/Remarks of the Project on :

1.1 Background : The Jamuna-Meghna River Erosion Mitigation Project emerged from the need to provide immediate protection from the progressive river erosion for the two ADB financed Command Area Development Projects (CADP): Pabna Irrigation and Rural Development Project (PIRDP), situated at the western bank of lower Brahmaputra/Jamuna River, and the Meghna-Dhonagoda Irrigation Project, situated at the eastern bank of the confluence of the Padma and Upper Meghna rivers . First concerns about the progression of the riverbanks towards the flood protection embankments were raised during an ADB mission at the end of 1999. Erosion of the flood embankments and consequent catastrophic flooding during the monsoon season would inevitably cause the loss of the benefits of the developing FCDI projects.

The urgency of the matter resulted in a fast succession of parallel developments. A pre-feasibility level study, under CADP Loan No. 1399-BAN (SF), was completed during the last quarter of 2000. Immediately there after, the Ministry of Water Resources, BWDB and the ADB formulated a PPTA (feasibility study) in early 2001.

At the same time, BWDB implemented four kilometers of emergency protection works at both the sub-project sites based on recommendations of the pre-feasibility study. The first phase of the feasibility level study under PPTA No 3659-BAN started in July 2001 and continued till mid-October, 2001 having a two weeks overlap with second phase of Feasibility Study.

Phase-I of Feasibility concentrated on flood measurements and provided design data and concepts for subsequent feasibility investigations. The second phase of the Feasibility Study was awarded to M/S Halcrow and its Associates and started in October 2001. It was substantially completed in April 2002 at the time of ADB's loan mission. Additional verification and refinement work on Feasibility Report was required based on the findings of ADB's supervision consultant and completed in October 2002 and submitted in an addendum to the feasibility report. BWDB strengthened the insufficient emergency bank protection implemented previously 2001 in early 2002 adopting principles of the new feasibility design. This emergency protection was sufficient to prevent the erosion at the flood protection embankments at both sites during the flood of 2002 season.

The loan 1941-BAN (SF) for the implementation of the Jamuna-Meghna River Erosion Mitigation Project was formulated in June 2002. The original loan amount was USD 42.2 M. The loan was approved at the end of November 2002 by ECNEC and ADB, and became effective on 1 April 2003. From the end of 2002 onwards, preparatory works were undertaken for the first major construction period under the loan planned for the dry season 2002/3 under Part A of the Project. Other project activities were postponed until start of the main Part B consultancy - initially planned to commence in April 2003. This was due to a court case by a bidder of geo-bag contract package #G-1. However, problems related to this first procurement contract of geo-textile bags could only be solved in December 2003 when a Supreme Court ruling finally cleared the way for the implementation of the Project. During the extended Part A, emergency work had to be implemented again just before the monsoon of 2003 to reduce riverbank erosion at both sites and helped the flood embankments to survive. At this time mainly jute bags were used instead of geo-bags due to ongoing court case against the award of the first major procurement contract for geo-textile bags.

Part B of the Project Consultancy started in April 2004. The Government approval of the consultant's contract was obtained in February 2004, based on the outcome of discussions between the selected company Northwest Hydraulic Consultants Ltd., Canada and BWDB held in April 2003. The contract was signed on 26 April 2004. However, to assist in the construction of bank protection and the capacity development, the first staff was fielded under retroactive financing from 3 April 2004. During the initial three months nearly 4 kilometers of riverbank were successfully protected to a level that

withstood the exceptional flood of 2004. Such a rapid response was unprecedented. The mid-term review mission took place in September 2006 at a time when most pilot initiatives were well developed or completed. This Mission suggested the extension of the Project by one year until June 2010 due to substantial cost savings that could be realized through the development of more cost-effective structural work, than envisaged during the feasibility study. The cost savings were intended to be mostly used to respond to new erosive threats and allied works. After mid-term review the Project was delegated to ADB's Bangladesh Resident Mission (BRM) in Dhaka.

The extension of the Project by one year was difficult. ADB's country portfolio mission suggested canceling USD 19 M from project savings and exchange gains in June 2007. At this time the related revised Development Project Proforma (DPP) normalizing future project activities and expenditures was not approved. Subsequently, the Project Management Office (PMO) reassessed the cost and suggested the cancellation of USD 6.75 M equaling the exchange gains. The Government approved the revised DPP in early November 2007. Subsequently ADB and Government agreed on the terms of the loan extension, which was finally cleared on 9 June 2008. The consultancy inputs of Part B with expatriate consultants ended on 31 July 2008. On 15 August 2008 the BWDB, NHC (the lead international consulting firm), and the national consulting partner signed a Novation Agreement for handing over all the remaining responsibilities to the national partner Resource Planning & Management Consultant (RPMC). The pending variation order related to the consulting services from January to July 2008 was signed in early September 2008. The Project Director, PMO submitted a variation order by incorporating all the internal re-apropriation for approval of the Purchase Committee of the government up to the loan extension until June 2010. The contract variation for consultancy with the national firm was approved by the Purchase Committee of the Government of the People's Republic of Bangladesh on 23rd April, 2009 for continuation of consulting services till 30th June, 2010. In the meantime the 2nd revised DPP was approved by the Government extending the project duration up to 30 June 2011. Upon the request from Government, the ADB also extended the loan until June 2011. The project Director again submitted another variation for consultancy services for the extended period by the same national firm to Ministry of Water Resources for approval. The Ministry of Water Recourses advised BWDB to select a national firm on sole source selection (SSS) for the remaining period (11 months) of the project ending on 30th June, 2011after obtaining ADB's clearance. Accordingly BWDB selected Resource Planning & Management Consultants (Pvt.) Ltd (RPMC) as a D/S of project work and longtime experienced forum on sole source basis.

1.2 Justification/Adequacy

1.3 Objectives: "The objective of the project is to sustain and enhance economic growth, poverty reduction and livelihood security in the areas threatened by riverbank erosion. The Project is specifically intended to sustain the incomes of people in the Pabna Irrigation and Rural Development Project (PIRDP) and the Meghna-Dhonagoda Irrigation Project (MDIP) areas through establishing cost effective and sustainable riverbank erosion management systems (REMS) which provides reliable mitigation measures through adaptive riverbank protection works and a range of non-structural instruments to adapt to the highly dynamic morphological processes of the Jamuna and Meghna rivers while protecting and enhancing the livelihoods of the poor in the Project areas[1]".

The scope or components of the Project, as formulated in the loan *Aide Memoire*, include: (i) riverbank protection works, (ii) non-structural river erosion mitigation measures, and (iii) institutional strengthening of REMS. The first two components focus on the PIRDP and MDIP areas, whereas the third component supports institutions at Project and national levels to establish and operate comprehensive REMS and water management. The CAD component was extended during the first months of Part B to address some shortcomings of the preceding project. For the purpose of effective monitoring and achievement of outputs, the Project has distinct performance targets that were evaluated during the mid-term review in 2006 and will be again evaluated at its completion in summer 2010. Implementation after the mid-term review is based on the substantial achievement of output targets, as well as other policy dialogue agreements, in particular, the satisfactory performance of riverbank protection works and the achievement of institutional targets

1.4 Project revision with reasons:

a) 1st Revision : In accordance with the loan agreement, a comprehensive Mid Term Review (MTR) of the project was carried out in 2006. Based on the findings and recommendations of MTR Mission, project was revised for the first time in December, 2006 in line with achieving project objectives. In the revision an additional 13.00 km of bank protection works were included to achieve goal of project against river erosion. Though the quantity of physical works increased to more than double the original quantity, the cost of bank protection works remained lower than the original estimate. This was possible

[1] cited from: Loan Agreement (Special Operations) (Jamuna-Meghna River Erosion Mitigation Project), between People's Republic of Bangladesh and Asian Development Bank, Dated 3 February 2003, Schedule 1

due to development of low cost yet sustainable bank protection works. The revised DPP cost increased by a nominal amount of Tk. 1030.00 lakh i.e. 2.74%. Taking devaluation in consideration, the RDPP cost was practically less than original PP cost.

b) 2nd Revision : The morphological changes of Jamuna River made situation complicated by siltation in mouth of Hurasagor. This hampered the navigational facilities at Baghbari river port. BIWTA requested BWDB to take protective works that would reduce silt deposition at the Hurasagr outfall. To mitigate this siltation a morphological observation and study was conducted by IWM and CEGIS. As per recommendations of the study the additional 4.00 km length at KoiJhury – Benotia area was included to avoid deposition of silt at Hurasagor outfall. The total lengths of the bank erosion protection become 28.44 km.

The delay in extension of Consultancy services, the physical works postponed for almost a year during 2009. As such one year extension of project period is required. The loan proceed of the project was extended by ADB for one year up to June, 2011. Total cost of the project stood Tk. 43353.08 lakh. The 2nd revised DPP was approved by the honorable Minister for Planning on 24.02.2010.

c) Re-appropriation: Due to increase of the cost of land acquisition and bank protective works , Re-appropriation proposal has been made to accommodate the increase amount from the savings amount of 'Improvement of Irrigation Infrastructures' and ' Rehabilitation of MDIP embankment at weak reaches'. Other reason for Re-appropriation is to adjust the amount between RPA and GoB matching fund as per actual requirements.

Land acquisition: land acquisition is included in the DPP for construction of bank protective work and walk way along the bank. Initially 11.44 km bank protective work was taken up. In course of time for morphological changes and public demand the bank protective length increased from 11.44km to 28.44km. The additional required land was included in the RDPP. But during land acquisition it is appeared that the cost of land, house holds compensation, tress and other installations has increased than the estimated cost. This increased amount Tk 100.00 lakh is proposed to accommodate from the savings amount of 'Improvement of Irrigation Infrastructures and 'Rehabilitation of MDIP embankment at weak reaches .

Construction of Bank Protection: Necessary measures have been taken to implement 28.44 km bank protection works. The total cost of bank protection works have been increased by Tk 520.00 lakh than the estimated amount. This increased amount of Bank protection works is proposed to accommodate from the savings amount of 'Improvement of Irrigation Infrastructures and 'Rehabilitation of MDIP embankment at weak reaches.

2. Rationale of the project in respect of Concept, Design, Location and Timing.

BWDB implemented two projects namely Meghna-Dhonagoda Irrigation Project and Pabna Irrigation and Rural Development Project in 1989 and 1992 respectively with financial assistance from ADB. The objective of the project was to support in increasing agricultural production by providing irrigation facilities in those area. Afterwards Command Area Development Project (CADP) was implemented (1996-2003) with financial assistance from the same donor to improve the irrigation infrastructures in both projects for proper operation and management of these two big projects. In the mean time the progressive erosion of Jamuna & Meghna river threatened the two said project. On this occasion a MoU was signed between GoB and ADB on 28th June 2001 in order to carry out a survey project how to save the two projects from this progressive erosion of Jamuna & Meghna river. The survey study recommended initiating river bank protection works practicing adaptive approach following Geo-textile revetment and accordingly Jamuna-Meghna River Erosion Mitigation Project was launched. The related activities of JMREMP started from early 2001 in response to an immediate need to provide river bank protection at both the sub-project sites to prevent progressive erosion of the flood embankment.

The concept of the project was based on a goal of developing a full cost-effective erosion mitigation system by adapting innovative riverbank protection concept. This concept is largely based on the use of sand-filled Geo-textile bags for under water protection. The project has progressed towards that concept and laid the formulation for adaptive management. The project developed the concept and successfully completed with the achievement of its objective. Thus the project achieved its goal in respect of concept, design, location and timing.

3. Brief description on planning and financing of the project and its applicability.

- Project Identification: The project was conceived as response to the emergency situation along the two important Command Area Development Project: namely Pabna Irrigation and Rural Development Project (PIRDP) and the Meghna-Dhonagoda Irrigation Project (MDIP). The project was based on the wider goal of developing a full cost effective erosion mitigation system piloting a new and innovative riverbank protection concept in parallel to emergency protective work and stabilization of river banks in the two said sub-project.

The concept is largely based on the use of sand-filled geo-textile bags (geo-bags) for the under water protection implemented in an area coverage manner, called adaptive approach. The project is located i) along the right bank of river Jamuna at Upazilla Bera and Shajahadpur, dist Pabna & Sirajganj near PIRDP and ii) along the bank of river Meghna and Dhonagoda in upazila Matlob dist Chandpur.

- Project Preparation : Two ADB financed sub-projects PIRDP and MDIP were endangered by the continuous erosion of Jamuna and Meghna river. For safe guarding the two sub-projects JMREMP was launched.
- Appraisal : The Jamuna-Meghna River Erosion Mitigation Project emerged from the need to provide immediate protection from the progressive river erosion for the two ADB financed Command Area Development Projects (CADP): Pabna Irrigation and Rural Development Project (PIRDP), situated at the western bank of lower Brahmaputra/Jamuna River, and the Meghna-Dhonagoda Irrigation Project, situated at the eastern bank of the confluence of the Padma and Upper Meghna rivers. First concerns about the progression of the riverbanks towards the flood protection embankments were raised during an ADB mission at the end of 1999. Erosion of the flood embankments and consequent catastrophic flooding during the monsoon season would inevitably cause the loss of the benefits of the developing FCDI projects.

The urgency of the matter resulted in a fast succession of parallel developments. A pre-feasibility level study, under CADP Loan No. 1399-BAN (SF), was completed during the last quarter of 2000. Immediately there after, the Ministry of Water Resources, BWDB and the ADB formulated a PPTA (feasibility study) in early 2001.At the same time, BWDB implemented four kilometers of emergency protection works at both the sub-project sites based on recommendations of the pre-feasibility study. The first phase of the feasibility level study under PPTA No 3659-BAN started in July 2001 and continued till mid-October, 2001 having a two weeks overlap with second phase of Feasibility Study.

Phase-I of Feasibility concentrated on flood measurements and provided design data and concepts for subsequent feasibility investigations. The second phase of the Feasibility Study was awarded to M/S Halcrow and its Associates and started in October 2001. It was substantially completed in April 2002 at the time of ADB's loan mission. Additional verification and refinement work on Feasibility Report was required based on the findings of ADB's supervision consultant and completed in October 2002 and submitted in an addendum to the feasibility report. BWDB strengthened the insufficient emergency bank protection implemented previously 2001 in early 2002 adopting principles of the new feasibility design. This emergency protection was sufficient to prevent the erosion at the flood protection embankments at both sites during the flood of 2002 season. The loan 1941-BAN (SF) for the implementation of the Jamuna-Meghna River Erosion Mitigation Project was formulated in June 2002.

- Credit Negotiation : The loan 1941-BAN (SF) for the implementation of the Jamuna-Meghna River Erosion Mitigation Project was formulated in June 2002. The original loan amount was USD 42.2 M. The loan was approved at the end of November 2002 by ECNEC and ADB, and became effective on 1 April 2003.
- Credit Agreement: The Credit Agreement was signed on 3 Feb 2003.
- Credit Effectiveness: The credit become effective from 1 April 2003.
- Loan Disbursement : Total Project Aide (PA) amounting to Tk 28321.33 lakh only.
- Loan Conditionalities : The project complied following the condition as per loan Agreement.
- Project Approval: The Approval of the project by ECNEC was made on 25 October 2002. Subsequently 1st and 2nd Revision was made on 4 Nov 2007 & 24 feb 2010 respectively. Lastly the project was re-approproated on 5 may 2011.
- Others (if any).

4. Analysis of the Post-Implementation situation and result of the project :

4.1 Whether the beneficiaries of the project have clear knowledge about the Target/ Objectives of the project.: **Yes**

4.2 Programme for use of created-facilities of the project **:Continuous**

4.3 O & M programme of the project**: Continuous**

4.4 Impact of the project -

4.4.1 Direct:

i) Protection of Pabna Irrigation and Rural Development Project (PIRDP) and adjascent area from erosion of Jamuna river

ii) Protection of Meghna Dhonagoda Irrigation Project (MDIP) and adjascent area from erosion of Meghna river

iii) Safty of Public and government owned assets and natural resources

4.4.2 Indirect

i) Environmental enhancement from erosion hazards

ii) Sustainable socio-economic enhancement

4.5 Transfer of Technology and Institutional Building through the project : JMREMP developed a Design guide line and a methodology for bank protective works. The Design guide line and methodology developed under JMREMP was widely circulated for replication through a national workshop. More over action from BWDB and MoWR was taken for replication the Design guide line and a methodology for bank protection in other project.

4.6 Employment generation through the project.: Hudge quantity of skilled /unskilled labour man dys were generated during implementation of the project.

4.7 Possibility of Self employment : Possibility of Self employment has been increased as the the existing commercial and business and all infrastructures are protected from bank erosion.

4.8 Possibility of women-employment opportunity: Yes, there is Possibility of women-employment thorough the project

4.9 Women's participation in development: During implementation of project hudge no of women were engaged for different works. Moreover **1543 nos** women were trained on disaster prepeardness, fisheries , co-operatives, Income Generating(IG) home gardening, tailoring, poultry rearing, beef fattening,, leadership development , participatory O & M training, Seed production and its management etc. These enhances Women's participation in development

4.10 Impact on environment: No adverse impact on environment is seen, rather the project enhances environmental hazards by protecting bank erosion.

4.11 Sustainability of the project: The project is very much sustainable.

4.12 Contribution to poverty alleviation/reduction.:

i) The project protected two irrigation projects by 28.44 km revetment works. This safe guard works contributed in poverty allivation/reduction.

ii) Moreover the people living along the embankment in the above two subproject areas were trained on disaster prepeardness, fisheries , co-operatives, Income Generating (IG) training on ome gardening, Tailoring, poultry rearing, beef fattening, leadership development for woman members, participatory O & M training, Seed production and its management etc. These trainings enhances the capacity of poor people to cope with disaster; substantially improve the social and economic condition of the poor people living along the embankment in the above subproject areas.

iii) Natural securities against river bank erosion.

4.13 Opinion of the public representatives, local elite, local administration, teachers, religious leaders, women's representatives etc.: Positve remarks about the project. The public demands more coverage for erosion protection for which JMRMP II is underway.

4.14 Contribution of Micro-credit programmes and Comments on overlapping with any NGO activities: The Micro-Cridit training was given among the members/stakeholders of 2 sub-projects namely PIRDP and MDIP. During project implementation period Micro-Cridit loan was introduced among the WMCS of two sub-projects. Now it is running in full swing. The re-covery rate of Micro-cridit is encouraging.

5. *Problems encountered during Implementation (with duration & steps taken to remove those)*

5.1 Project Management
5.2 Project Director
5.3 Land Acquisition
5.4 Procurement
5.5 Consultancy
5.6 Contractor
5.7 Manpower
5.8 law & Order
5.9 Natural clamity
5.10 Project financing, allocation and release.
5.11 Design formulation/approval
5.12 Project aid disbursement and re-imbursment
5.13 Mission of the development partners.
5.14 Time & Cost Over-run
5.15 Project Supervision/Inspection
5.16 Delay in Decision
5.17 Transport
5.18 Training
5.19 Approval
5.20 Others.

No major problems encountered during implementation of the project regarding the above facts. Whatever problems arised during implementation of the project regarding the above facts were resolved localy and amiecably.

6. Remarks & Recommendations of the Project Director:

Jamuna-Meghna River Erosion Mitigation Project started on 2002-03 and completed on 2010-11. The project was conceived as response to the emergency situation along the two important Command Area Development Project: namely Pabna Irrigation and Rural Development Project (PIRDP) and the Meghna-Dhonagoda Irrigation Project (MDIP). The project was based on the wider goal of developing a full cost effective erosion mitigation system piloting a new and innovative riverbank protection concept in parallel to emergency protective work and stabilization of river banks in the two said sub-project. The concept is largely based on the use of sand-filled geo-textile bags (geo-bags) for the under water protection implemented in an area coverage manner, called adaptive approach. The concept is different from the traditional C.C. block dumping in the launching apron of the bank protection work. The project has also developed a process of dumping sand filled bags from positioned barges using 'Total Station'. Adapting the said low cost protective work the project completed 28.44 km. of bank protective work against original DPP provision of 11.44 km. with a little increase of resource. The bank protection work so far done under the project is running in good condition. But the 10.00 km bank protection work from Koujuri to Betotia needs continuous monitoring as the work completed in the ending year of the project. Continues survey and monitoring work is being carried out to observe the latest position of the work. However on careful observation of the survey report if required it should be taken necessary steps to dump additional geo-textile bags to cover up the bare space of the launching aprons. It will save the protective work from further serious damage.

The project introduced participatory water management actives by organizing stakeholder/beneficiaries. After a series of development regarding water users groups (WMG) and as per recommendation of Panel of Experts (PoE) 80 numbers of Water Management Cooperatives Societies (WMCSs) in both PIRDP (50) and in MDIP (30) has been formed. All these 80 Cooperative Societies were registered with department of cooperative (DoC). Now BWDB's extension wing and DoC have to closely monitor their activities for their sustainability in long run.

Project implemented Resettlement issues through 8(eight) Resettlement Plan (RP) for 28.44 km of bank protection in both sub-project in which ADB's safeguard issues have been addressed. Two Resettlement villages have been established in the project area in which 200 family has been relocated. They purchased the ~~lands~~ which have been allocated to them by the resettlement benefit received from project. The individual land and homestead have been registered to the name of these 200 families. It is a mile stone of the resettlement activities of the project and should be replicated in other project.

The project carried out two physical model tests one is at Vancouver Canada other is at River Research Institute (RRI) Bangladesh to investigate the effectiveness of geo-bags as bank protection work and in particular the launching behavior of geo-bags. The recommendation of these two model tests could be

considered in designing the protective work with geo-bags. It might have important tools for further development of using geo-textile bags for bank protection work in other projects.

Project implemented disaster plans at both sub project sites through Bangladesh Disaster Preparedness Center a NGO and lastly engaging CEGIS. The report of these activities may also be a guideline for future project regarding Disaster Management Plans. The project also carried out an Environmental Impact Assessment (EIA) to use of sand filled Geo-bags under water by CEGIS. This document may also help in formulating the projects in other areas.

The Project prepared a Design Guide Lines for Riverbank Protection in collaboration with BUET. It is subsequently approved by BWDB followed by a national seminar to disseminate the methodology is one of the major success of the project. It will remain as overall guidelines for designing bank protection work with geo bags in future.

Lastly may be mentioned here that Jamuna-Meghna River Erosion Mitigation Project develop a innovative River bank Erosion Management System which is cost effective. The concept is largely based on the use of sand filled geo-textile bags (geo-bags) for the under water protection. This is different from the traditional C.C. block dumping in launching apron of the bank protection which is much more costly in comparison to the sand filled geo-textile bags. The sustainability of this new innovative system is yet to be tested although 8/9 flood season passed away without any damage to the bank protective work done under JMREMP. It is my pleasure to inform all concern that on successful implementation of JMREMP with cost-effective river erosion system, the donor agency like ADB as well as Bangladesh Government is paying interest for possible replication adapting the method used in JMREMP. ADB and GoB has also processed a new project named Main River Flood and River bank Erosion Risk Management Program (JMREMP-II) adopting JMREMP method. On careful observation and updating of JMREMP methods, it can be replicated in other bank protection projects in Bangladesh. I strongly believe that it will save hard earning money of the country.

In this occasion, I would like to convey my thanks and gratitude to my colleges of BWDB. Concerned officials of PMO/SMO, project consultant, NGOs, contractors and all agencies for their continued support for the successful implementation of the project. On behalf of the project I also gratefully acknowledge the guidance and cooperation of concerned government official, officials of MoWR, Planning Commission, IMED, BWDB and Asian Development Bank, Bangladesh bank and Agrani Bank for successful completion of JMREMP.

Date : 26th Oct. 2011

Signature and seal of the Project Director/Manager
Md. Abdul Quddus
Project Director
PMO-JMREMP
BWDB Dhaka.

7. Remarks/Comments of Agency Head

Date : .....

Signature and Seal
(Md. Habibur Rahman)
Director General
Bangladesh Water Dev. Board
Dhaka.

8. Remarks/Comments of the officer in- charge of the Ministry/Division

Date :

Signature and Seal