GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH MINISTRY OF WATER RESOURCES

PROJECT/PROGRAMME COMPLETION REPORT : IMED 04

FOR

REHABILITATION & STRENGTHENING OF SIRAJGANJ HARD POINT (REVISED)

"পিরাজগঞ্জ হার্ড পয়েন্ট পুনর্বাসন ও শক্তিশালীকরণ প্রকণ্ণ" (সংশোধিত)

BANGLADESH WATER DEVELOPMENT BOARD

Government of the People's Republic of Bangladesh **Ministry of Planning**

Implementation Monitoring and Evaluation Division

PROJECT/PROGRAMME COMPLETION REPORT: IMED 04/2003 (Revised)

A. PROJECT/PROGRAMME DESCRIPTION:

01.	Name of the Project/Programme	:	REHABILITATION & STRENGTHENING OF SIRAJGANJ HARD POINT (REVISED)
02. 03. 04.	Administrative Ministry/Division Executing Agency Location of the Project	:	Ministry of Water Resources. Bangladesh Water Development Board. Upazilla-Sirajganj Sadar, Dist. Sirajganj.
05.	Objective of the Project	:	Main objectives of the project are to provide extended flood protection against yearly ravages of the Jamuna River to an area of 32600 ha lands of Sirajganj Sadar Upazila by Rehabilitation & Strengthening of Sirajganj Hard Point.

06. Estimated Cost

(In lakh Taka)

	Original	Latest Revised
(a) Total	6623.85	7145.12
(b) Taka	6623.85	7145.12
(c) Foreign Currency	-	-
(d) Project Aid	-	**
(e) RPA	-	_

		personal per			
07.	Date of Approval	:	PCP	DPP	
	(a) Origina <mark>l</mark>	:		August' 2010	
	(b) Latest Revised	:		December' 2011	
0.8	Implementation Pariod				

	Date of Commencement	Date of Completion
(a) Original	2010-2011	2011-2012
(b) Latest Revised	2010-2011	2011-2012
(c) Actual	2010-2011	2011-2012

09. Financing Arrangement (Source-wise) : GOB

9.1 Status of Loan/Grant

Foreign Financing a)

: Does not arise

Source (s)	Currency	Amount	Nature	Date of	Date of	Date of	Closing
	as per	in USS	(Loan/Grant/supplier's	Agreement	Effectiveness	Original	Revised
	Agreement	(Million)	credit)				
1	2	3	4	5	6	7	8
Not Applicable							

b) GOB:

(In Lakh Taka)

 			(III Lakii Taka)
Total amount	Loan	Grant	Cash Foreign Exchange
1	2	3	4
7145.12	-	7145.12	-

9.2 Utilization of Project Aid/Programme Aid: (Source wise)

(In million)

						(in million)
Source (s)		Total Amount	Actual Expenditure		Unutilized Amount	
	In USS	In Local Currency	In USS	In Local	In USS	In Local
				Currency		Currency
1	2	3	4	5	6	7
GOB	-	a) 6623.85	-	-	-	-
		b) 7145.12 (Revised)	-	6453.77		691.35

9.3 Re-imbursible Project Aid/Programme Aid (RPA)

(In lakh Taka)

RPA Amount		Amount Spent	Amount Claimed	Amount Re-	Remarks	
As per PP	As per Agreement			imbursed		
1	2	3	4	5	6	
Not Applicable						

B. IMPLEMENTATION POSITION

01. Implementation Period

Implementa	Implementation Period as per PP		Time Over-run (% of original	Remarks
Original	Original Latest Revised		implementation period)	
1	2	3	4	5
2010-2011	2010-2011	2010-2011		-
to	to	to	_	
2011-2012	2011-2012	2011-2012		

02. Cost of the Project/Programme

(in lakh Taka)

					(III Iakii Iaka)	
Description	Estima	ated Cost	Actual	Cost over-run (%	Remarks	
	Original	Original Latest revised		of original cost)		
1	2	3	4	5	6	
Total	6623.85	7145.12	6453.77	-		
Taka	6623.85	7145.12	6453.77	-		
PA	-	-	-	_		

03. Project/Programme Personnel

Sanctioned	Manpower	Status of	Manpower			
strength as per PP	employed during execution	Manpower requirement for O & M as per PP	Existing manpower for O & M	Others	Emp	oyed
1	2	3	4	5	Male	Female
Officer (s)	11	13	10	_	10	-
Staff (s)	23	69	22	-	21	1
Total:	34	82	32	-	31	1

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

Field of	Provision as per PP		Actua	Remarks	
Training/Study/tour/workshop/Seminer etc.	Number of person	Man-months	Number of person	Man-months	
1	2	3	4	5	6
a. Foreign	-	-	-	-	-
b. Local	8	2.65	8	2.65	-

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

(In Lakh Taka)

Items of wo <mark>r</mark> k (as per PP)	Unit	Target (as per PP)	Actual	Progress	Reasons for
		Financial	Physical (Quantity)	Financial	Physical (Quantity)	deviation (#)
1	2	3	4	5	6	7
(a) Revenue Component:						
Supplies and services:						
	L.S.		1 item		L.S.	As per field
Petrol and Lubricant		5.00		4.98		requirement
Printing and publication	L.S.	2.00	1 item	1.96	L.S.	-do-
Stationery, Seal & Stamps	L.S	2.00	1 item	1.99	L.S	-do-
Training on Hydro-Pro Software with	L.S		1 item		L.S	-do-
Upgradation		2.00		2.00		
Survey & Investigation	L.S.	10.00	1 item	9.99	L.S.	-do-
Repair, maintenance & rehabilitation			1 item			-do-
Repair & maintenance of existing	Nos.	6.00	6 item	5.97	Nos.	-do-
vehicles(Jeep 3 nos. & Motor Cycle 3 nos.)						
		27.00		26.89		-do-
(b) Capital Component:						-do-
Acquisition of Assets:						-do-
Motor Cycle (125 C.C., 1 No,)	No.	1.25	1 item	1.25	No.	-do-
Survey Boat with Engine (1 no.) &	No.		1 item		No.	-do-
accessories		12.00		11.40		
Photocopier (1No.)	No.	1.50	1 item	1.50	No.	-do-
Levelling Instrument with stands (1 No.)	No.	0.50	1 item	0.48	No.	-do-
Digital Echo Sounder with transducer (1	No.		1 item		No.	-do-
No.)		18.00		19.77		
Differential GPS (1 No.), Hand GPS (2	No.	2.00	3 item	17.77	No.	-do-
Nos.)		3.00				
Brand Computer with Laser Printer &	No.		1 item		No.	-do-
accessories (One Desktop Computer, One Laser Printer & 1 No. UPS)		1.00		1.00		961
Construction of works:		1.00		1.00		-do-
a) Rehabilitation & Strengthening of						-do-
Sirajganj Hard Point (Chainage: Section C-0						-00-
to Section C-666, Section D-0 to Section D-						
210 and Section D-430 to Section D-1500,						
Total Length=1946m). b) Improvement of						
BRE-cum-Road from Ranigram Groyne to						
BL School (Chainage: meter 0.00 to meter						
3000.00 =3000 m).		7082.10		6391.48		
Sub-Total =		7118.12		6426.88		-do-
					1	

06. Information regarding Project/Programme Director (s)

Name & Designation with	Full time	Part time	Responsible	Da	te of	Remarks
pay Scale			for more than one project	Joining	Transfer	
1	2	3	4	5	6	7
01. Md. Abdul Maleque Executive Engineer BRE (Spl.) O&M Division, BWDB, Sirajganj.	Full time	-	N/A	01-07-2010	15-10-2010	
02. Md. Sajidur Rahman Sarder Executive Engineer BRE (Spl.) O&M Division, BWDB, Sirajganj.	Full time	-	N/A	16-10-2011	30-06-2012	



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	-	-	-	-	-	
Јеер	-	-	-	-	-	
Microbus	-	-	-	-	-	
Minibus	-	-	-	-	-	
Bus	-	-	-	-	-	
Pick-up	-	-	-	-	-	
Truck	-	-	-	-	-	
Motor Cycle	1	-	-	-	-	
By Cycle	-	-	-	-	-	
Speed Boat	1	-	-	-	-	
Launch	-	-	-	-	-	
Others with	Photocopiar,	-	-	-	-	
name	Computer,					
	Leveling					
	Instrument,					
	Eco Sounder,					
	DGPS etc.					

08. Procurement of Goods, Work and Consultancy Services

081 Goods & Works of the Project/Programme costing above Tk. 200.00 akh and Consultancy above Tk. 100.00 lakh.

Procurement of Goods:

Description of procurement (goods/works/consultancy) as per bid document		/Proposal Cost ore Taka)	Tender/Bid/Proposal Date of completion works/services and supposed goods			and supply of
-	As per PP	Contracted value	Invitation date	Contract signing /L.C opening date	As per contract	Actual
1	2	3	4	5	6	7
1. Motor Cycle (125 C.C., 1 No,)	1.25	1.25	28-05-2011	27-06-2011	30-06-2011	30-06-2011
2. Survey Boat with Engine (1 no.) & accessories	12.00	11.48	28-11-2011	29-12-2011	30-03-2012	30-03-2012
3. Photocopier (1No.)	1.50	1.50	28-05-2011	27-06-2011	30-06-2011	30-06-2011
4. Levelling Instrument with stands (1 No.)	0.50	0.48	28-11-2011	29-12-2011	30-03-2012	30-03-2012
5. Digital Echo Sounder with transducer (1 No.)	19.77	19.77	19-04-2011	07-06-2011	30-06-2011	30-06-2011
6. Differential GPS (1 No.), Hand GPS (2 Nos.)			19-04-2011	07-06-2011	30-06-2011	30-06-2011
7. Brand Computer with Laser Printer & accessories (One Desktop Computer, One Laser Printer & 1 No. UPS)	1.00	1.00	19-04-2011	07-06-2011	30-06-2011	30-06-2011

Procurement of Works:

Description of procurement (goods/works/consultancy) as		Proposal Cost ore Taka)	Tender/Bi	d/Proposal	Date of completion of works /services and supply of goods			
per bid document	As per PP	Contracted value	Invitation date	Contract signing /L.C opening date	As per contract	Actual		
1	2	3	4	5	6	7		
1. Rehabilitation & Strengthening of Sirajganj Hard Point (Chainage: Section C-0 to Section C-666, Section D-0 to Section D-70, Total Length=736m; Package No. RSHP-01)	1743.01	1534.70	19-09-2009	09-01-2010	09-05-2011	31-03-2012		
2. Rehabilitation & Strengthening of Sirajganj Hard Point (Chainage: Section Section D-70 to Section D-210, Section D-430 to Section D-920 Total Length=630m; Package No. RSHP-02)	1752.88	1121.02	19-09-2009	09-01-2010	09-05-2011	31-03-2012		
3. Rehabilitation & Strengthening of Sirajganj Hard Point (Chainage: Section Section D-920 to Section D-1500, Total Length=580m; Package No. RSHP-03)	1758.04	1219.42	19-09-2009	09-01-2010	09-05-2011	31-03-2012		

Description of procurement (goods/works/consultancy) as		/Proposal Cost ore Taka)	Tender/Bi	d/Proposal	Date of completion of works /services and supply of goods		
per bid document	As per PP	Contracted value	Invitation date	Contract signing /L.C opening date	As per contract	Actual	
1	2	3	4	5	6	7	
4. Geo-textile Bag and CC Blocks (45cm3) for Rehabilitation and Strengthening of Sirajganj Hard Point in Upazila Sirajganj Sadar, District: Sirajganj under BRE (Specialized) O & M Division, BWDB, Sirajganj during 2010-2012(Package No. SGB-01).	220.70	220.70	28-04-2011	13-06-2011	30-09-2011	30-09-2011	
5. Supply of Geo-textile Bag (250kg) & Dumping of Geo-textile Bag and CC Blocks (45cm3) for Rehabilitation and Strengthening of Sirajganj Hard Point in Upazila Sirajganj Sadar, District: Sirajganj under BRE (Specialized) O & M Division, BWDB, Sirajganj during 2011-2012(Package No. SGB-02)	643.99	522.47	01-07-2011	18-7-2011	31-08-2011	31-08-2011	
6. Improvement of BRE-cum-Road from Ranigram Groyne to BL School (Chainage: meter 0.00 to meter 3000.00 = 3000 m; Package No. RSHP-05).	355.45	355.09	13-10-2011	01-12-2012	29-05-2012	29-05-2012	
7. Rehabilitation & Strengthening of Sirajganj Hard Point (Chainage: Section Section D-135 to Section D-235, Section D-325 to Section D-385, Section D-615 to Section D-695 Total Length=355m; Package No. RSHP-06).	1402.16	1379.45	08-11-2011	29-12-2011	16-06-2012	16-06-2012	

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

Name of the Field	Approved	man month	Actual man month	Remarks
	As per PP	As per contract	utilised	
1	2	3	4	5
a) Foreign:	N/A	-	-	~
b) Local:	N/A	_	-	-

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

C. FINANCIAL AND PHYSICAL PROGRAMME:

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

(In Lakh Taka)

							(III Lakii Tar			
Financial		Fin	ancial prov	vision & phys	sical	Fina	incial provision & physical target			
Year		target as per original PP					as per latest revised PP			
	Tota	al	Taka	P.A	Physical %	Total	Taka	P.A	Physical %	
1	2		3	4	5	6	7	8	9	
2010-2011	5458.	.21	5458.21	-	80%	2020.77	2020.77	-	75.63	
2011-2012	1165.	.64	1165.64	-	20%	5124.35	5124.35	-	24.37	

01. (b) Revised ADP allocation and progress:

(In lakh Taka)

								(ili lakii laka)
Financial	F	Revised Allocation & target			Taka	Expenditure & physical progress			gress
year	Total	Taka	P.A	Physical %	release	Total	Taka	P.A	Physical %
1	2	3	4	5	6	7	8	9	10
2010-11	2020.77	2020.77	-	75.63	2020.77	2020.77	2020.77	-	75.63
2011-12	5102.00	5102.00	-	24.37	5102.00	4433.00	4433.00	-	21.30



D. ACHIEVEMENT OF OBJECTIVES OF THE PROJECT/PROGRAMME:

objectives as per PP	Actual acinevement	Reasons for shortfall, if any
		Not Applicable

E. BENEFIT ANALYSIS

01. Annual Out-put:

Items of out -put		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/programme).				
Assets amounting to Tk 57877.00 lakh have been protected from the erosion of the Jamuna river. About 32600 ha area							
of Sirajgani Sadar	Upazilla has been prote	cted from annual flood.					

02. Cost/Benefit:

	Item	Estimated	Actual
(1) Benefit cost rat	o of the project/programme		
(i) Financial		1.32: 1.00	1.46 : 1.00
(ii) Economic		1.58 : 1.00	1.75 : 1.00
(2) Internal Rate of	Return		
(i) Financial		16.29%	17.76%
(ii) Economic		19.63%	20.66%

03. Please give reasons for shortfall, if any, between the estimated and actual benefit :

F. MONITORING AND AUDITING

01. Monitoring:

Date of Inspection	Identified Problems	Recommendations
2	3	4
15-12-2010	-	-
17-03-2010	-	-
-	-	-
	2 15-12-2010	2 15-12-2010 -

02. Auditing during and after Implementation :

2.1. Internal Audit:

2.2. External Audit:

1	Audit Report	2	resolved or not.
Audit period	submission of	Major findings/objections	Whether objections



G. DESCRIPTIVE REPORT

Project Background

BWDB appointed Sir William Halcrow & Partners Ltd. in association with Danish Hydraulic Institute (DHI), Design Innovations Groups (DIG) to make study and investigation of the Project. Accordingly recommendations have been made by the study group to protect the Right Bank of Brahmaputra River from the erosion in 27 places on priority basis including Sirajganj Town, Kalitola, Sariakandi and Mathurapara etc. On the basis of said study recommendation incorporated in the Master Plan, the 1st phase River Bank Protection Project (RBPP) for priority works of BRE came up for execution of construction of Hard Points at 3 identified locations (Sirajganj, Mathurapara and Sariakandi) funded in part by a credit secured by the GOB from the International Development Association (IDA) of the World Bank (WB). On the basis of successful completion of 1st phase priority works, the 2nd phase works were initiated for the construction of 16 nos spurs on the Right Bank of Jamuna River at critical locations, commenced in 1999-2000 & completed in 2001-2002 amongst which 2 nos. spurs built at Betil and Enayetpur adjacent upstream of the proposed project areas, funded by GOB which are not yet enough to protect the BRE and consequently not stabilizing long reach of right bank of the Jamuna river.

The Brahmaputra-Jamuna is the largest and most important river system in Bangladesh, accounting for more than 50 percent of the total inflow into the country from across the border. It is a braided river without fixed banks and with frequently shifting channels. The bank erosion process is a complex mechanism and is influenced by a number of factors.

A 220 km long earthen embankment, known as the Brahmaputra Right Embankment (BRE) has been constructed on the western bank of the Brahmaputra-Jamuna river to protect the lands against the ravages of yearly flood. However, every year this embankment has to be retired landward at several places due to bank erosion, a total length of about 150 km of retired embankment has been constructed over the past 20 years.

The security of Brahmaputra Right Embankment (BRE) and consequently the area protected by the BRE has been seriously threatened by continued bank erosion. Moreover, the morphological change of Jamuna River at that point is found very prominent by Bathymetric Survey. Hence, it is essential to strengthen the Sirajganj Hard Point at almost the full length.

Slope damage of Sirajganj Hard Point on 10.07.2009:

At first the damage started at the slope of the Hard Point on 10.07.2009 at 8.30am in between Section D-210 to Section D-330. The damage was under controlled by dumping sand filled Geo bags / Synthetic bags and CC Blocks by 12.00 noon. In the mean time about 120 meter slope with crest washed out into the river. Noted that, at 6.00am of that day the water level of Sirajganj Hard Point was 12.60 meter but the danger level at that point is 13.75 meter. The combined effort of BWDB officials and district administration, Army, Police and local people the damage became under control. Later on according to the opinion of expert the failure of the Hard Point occurred due to: a) the scouring of that part was beyond the design level b) lack of adequate design etc.

Slope damage of Sirajganj Hard Point on 17.07.2009:

Second time the damage started at the slope of the Hard Point on 17.07.2009 at 10.00 am in between Section D-340 to Section D-430. The damage was under controlled by dumping sand filled Geo bags / Synthetic bags and CC Blocks by 5.00 pm. In the mean time about 90 meter slope with crest washed out into the river. Noted that, at 6.00am of that day the water level of Sirajganj Hard Point was 12.20 meter. The combined effort of BWDB officials and district administration, Army, Police and local people the damage became under control.

The Honorable Minister, Ministry of Water Resources, Ministry of Fisheries & Livestock, Ministry of Communication, State Minister, Ministry of Power, Energy & Mineral Resources along with the Secretary, Ministry of Water Resources, DG of BWDB and other concerned high Officials visited the Sirajganj Hard Point and instructed for immediate repair and rehabilitation of this important project.

Project objectives:

Main objectives of the project are to provide extended flood protection against yearly ravages of the Jamuna River to an area of 32600 ha lands of Sirajganj Sadar Upazila by repair and rehabilitation of Sirajganj Hard Point.

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Since the slope of the Sirajganj Hard Point was damaged two times by the erosion of the Jamuna River hence the urban and semi-urban areas of Sirajganj Town is under threatened. It is found from Periodic Routine Bathymetric Survey by sophisticated instruments like GPS, Echosounder with the help of Hydro-pro software that the scouring level of river at that point is beyond the design level. So, strengthening the Sirajganj Hard Point at almost the full length (1946 meter) is essential. Otherwise, further slope damage may be occurred at the upstream & downstream of damaged portion of the Hard Point. It is noted here that the repair of Sirajganj Hard Point has already been started on this particular location (Section-D:210m to Section-D:430 m = 220 m) under non development revenue budget since 1, February, 2010.

Revision Required:

The main component of the Project is a) Rehabilitation & Strengthening of Sirajganj Hard Point (Chainage C-0 to Section-C-666, D-0 to D-210 and Section D-430 to D1500, Total length=1946.00m), b) Improvement of BRE-cum-Road from Ranigram groyne to BL School (Chainage: meter 0.00 to meter 3000.00=3000.00 m). The items of the component (a) added to the revision are:

- 1. Repair & Rehabilitation of Sirajganj Hard Point (SHP) on the basis of new design amounting Tk 1402.16 Lac:
- 2. Supply and Dumping of Geobag and dumping of CC Blocks over the damaged portion of revetment work of SHP on urgent basis amounting to Tk 864.69 Lac.

The item of the component (a) dropped in the revision is

i) Manufacturing and Supplying of CC Blocks as stock pile for SHP which is not required now because of stock piling of hard rock to be provided in another package financed by World Bank under WMIP.

9.2 Justification/reason for proposed revision:

The main component was divided in to 5 Packages incorporated in the Total Procurement Plan of the original DPP. Accordingly, as mentioned in the year wise breakdown, 3 packages (RSHP-1, 2 & 3) were tendered and work orders were issued in January, 2011 with completion date within the June, 2011.

Jamuna is one of the most mighty river carrying a water discharge of about 1,04,000 m3/see in the monsoon season with about 8.5 million metric ton of sediment discharge per day. The nature of Jamuna is braiding. It has number of channels and sand bars in its course of flow. It is often shifting its course of main flow from one channel to another. The present trend of course shifting is heading torwards the Sirajganj Hard Point. The direction of course shifting along with its rate of change and extent is very much uncertain and unpredictable. As a result of the course shifting and the action of the dominant and oblique flow, tremendous scouring up to the level -42.4m PWD (greater than design) has occurred causing damages at three locations of the Hard Point on 18, 21 &24 July, 2011. On 18 July, 2011 about 80m slope (Section D-615 to Section D-695) of Hard Point was completely destroyed and went under water. Only after three days later on 21 July 2011 a major destruction occurred and about 115 m (Section D-420 to Section D-535) slope with crest wall and inspection road were completely engulfed into the Jamuna River. Again on July 24, 2011 another part of the Hard Point was destroyed and at that time about 100m (Section D-135 to Section D-235) slope with crest wall was washed away. At that time about 60m (Section D-325 to Section D-385=60m) slope was partially damaged. During that time from the bathymetric survey it was revealed that the total falling apron zone was in critical condition as the scour level exceeding the design level. The fear and horror of the nearby population made them arrogant to attack the BWDB office and officials demanding urgent action to stop erosion of Jamuna and to take further necessary action in this regard.

As per discussion with local administration, people's representatives, Army personnel & concerned BWDB authorities, Geo-bag and CC block dumping were carried out as urgent protection work. The immediate result of urgent protection work is the stopping of progressive scour and its damage. After the damage on 18 July 2011 an investigation Committee has been formed vide Ministry of Water Resources Memo no 42.034.031.00.00.019.2011-465, Date 20/07/2011 with Dr. Prof. M. Monwar Hossain, Executive Director of

Institute of Water Modeling as convener. The Committee recommended the following immediate measures in order to protect further damage of Sirajganj Hard Point:

- To dump Sand filled Geo bags (250kg) in the appropriate affected areas by barge using GPS by locating scour holes with the help of Bathymetric Survey.
- ii) To store adequate Geo-Bags at site.

- To dump sand filled geo bags with in the area of 36000 sqm. (Affected length: SC=400m & SD=800m, total=1200m) about 30m outside the launching apron zone in order to restrict scour hole.
- iv) To arrange the dredging activities in the opposite site of Sirajganj Hard Point in order to release the water pressure.
- v) To make Laboratory test of Geo-textile filter and underlying soil sample used in Sirajganj Hard Point.
- vi) To strengthen the Specialized O&M Division with the required manpower having technical knowledge.
- vii) To improve Monitoring activities of the Hard Point with the necessary equipment and logistic support.
- viii) To arrange necessary security as per KPI rules.
- ix) To restrict movement of heavy vehicles over the inspection road of Hard Point.
- x) To involve the local people, local administration and security forces as far as possible while doing the emergency protection work.

During the period of urgency, these immediate measures were taken into account and followed strictly. As a result at that time no further devastation was occurred.

On the 6th September 2011 the Ministry of Water Resources vide its memo no. 42.034.0.3 1.00.00.019.2011-557 gave following directives for the permanent solution of damage in the Hard Point.

- The BWDB will implement the immediate measures recommended by the committee during the monsoon of this year and inform it to the ministry immediately.
- Sirajganj Hard Point is now in vulnerable condition. For rehabilitation and strengthening of this structure in order to make it sustainable a detailed study program (Mathematical & Physical Modeling and EIA & SIA) can be conducted. The Foreign Experts also can be incorporated in the study program. But a specific proposal have to be submitted to the Ministry by the BWDB immediately.
- The necessary measures for implementation of the Project for Rehabilitation and
- Strengthening of this important structure with the financial & technical support of the Development Partners or International Agencies can be taken as per recommendations of the Study Program.

According to these directives a project has been taken for rehabilitation and strengthening of Sirajganj Hard Point with improved design. The design has been prepared by Design Circle -6,

BWDB, Dhaka vide the Drawing No.NWZ/4(B)-4958 to 4968, Date: 24-10-2011. It is noted here that the repair and rehabilitation of the damage part of the hard point i.e. Section D-135 to Section D-235 (100m), Section D-325 to Section D-385 (60m), Section D-420 to Section D-535 (115m) and Section D-615 to Section D-695 (80m) has been planned to be implemented under annual development project (Rehabilitation & Strengthening of Sirajganj Hard Point) funded by GoB. The other part of the hard point i.e. Section A-200 to Section A-323 (123m), Section C-00 to Section C-666 (666m), Section D-00 to Section D-135 (135m), Section D-235 to Section D-325 (90m), Section D-385 to Section D-420 (35m), Section D-535 to Section D-615 (80m) and Section D-695 to Section D-1500 (805m) has been decided to be rehabilitated by WMIP, FDR, funded by World Bank. Hence in this part the length of rehabilitation stands to 1934m. Accordingly the estimate of this part has been prepared with respect to the above mentioned approved design.

The damage portion is urgently needed to be reconstructed following the respective drawings before the next flooding season. Thus Geo bag and CC Block dumping work carried out during the period of damage of Sirajganj Hard Point (from 12 July 2011 to 15 October 2011) on urgent basis and reconstruction of damaged portions have been evolved as restructuring of the main civil component and thus the revised DPP has been proposed.

Accordingly 1st Revised DPP of the Project has been re-casted to Tk. 7145.12 lac which has been approved by the Ministry of Water Resources vide memo no. ৪২.০৪১.০১৪.০১.০০.০২০.২০১০.০৮; তারিখ-১৭-০১-२०১२ खिः ।

No adverse effects have been imposed on environment after completion of the Project.

Due to the project implementation, physical safety and sense of security among the project people have been developed resulting in enhanced investment in business and development work at Sirajganj Town and its vicinity. These all did have caused enhanced opportunity of employment and poverty alleviation.

> (Md. Sajidur Rahman Sarder) **Executive Engineer** BRE(Spl.) O & M Division, BWDB, Sirajganj.

Project/programme Director:

Remarks & Recommendations of the River Bank Protection work arrested river bank erosion of the Jamuna River at the Sirajganj Hard Point. About 32600 ha area of Sirajganj Sadar Upazilla protected from flooding of the Jamuna River.

Date :	(মোঃ সাজিদুর রহমান সরদার্ছ) নির্বাহী প্রকৌশনী, Signature and seal of the Regigal/Programme Director/Manager বাপাউবো, সিরাজ্বার্থ।
Remarks/Comments of Agency Head Date:	
	Signature and Seal
8. Remarks/Comments of the officer in-charge of	of the Ministry/Division
Date :	

Signature and Seal