

BANGLADESH WATER DEVELOPMENT BOARD



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

Name of the Project: Protection of the Both Bank of Halda River by Bank Protective Work at different locations in Hathazari & Rauzan Upazila in Chittagong District (2nd Revised).

PROJECT PERIOD: JANUARY 2017 TO JUNE 2023.

DIVISION : RANGAMATI O&M DIVISION, BWDB, KAPTAL.
CIRCLE : CHITTAGONG O&M CIRCLE, BWDB, CHATTOGRAM.
ZONE : SOUTH-EASTERN ZONE, BWDB, CHATTOGRAM.

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

PROJECT COMPLETION REPORT: IMED 04/2003 (REVISED)

A. PROJECT DESCRIPTION:

01. Name of Project: : Protection of the both bank of Halda River by Bank Protective Work at different locations in Hathazari & Rauzan Upazila in Chittagong District(2nd Revised).
02. Administrative Ministry/ Division : Ministry of Water Resources (MoWR)
03. Executing Agency : Bangladesh Water Development Board (BWDB)
04. Location of the Project : Upazila- Hathazari & Rauzan, District: Chattogram.

05. Objectives of the Project :

- ❖ To rehabilitate damaged BWDB infrastructures under Halda River different location protection of tidal flood and saline intrusion by various natural disasters.
- ❖ To bring the damaged structures (Bank Protective work along the both bank of Halda river 13.740 Km, Construction of Flood Wall 1.715 Km, Construction of Embankment 9.379 Km, Re-Sectioning of Embankment 14.442 Km, Raising and upgrading of existing road cum embankment 1.307 Km & Drainage structures 5 nos) in a sustainable condition for ensuring the desired benefits of the Halda River area of 12500 hectares.
- ❖ To increase sustainable socio-economic development by enhancing natural security against cyclonic tidal surge and wave.
- ❖ To address the midterm Rehabilitation Programme.

06. Estimated Cost:

(In Lakh Taka)

	Original	1 st Revised	Latest Revised (2 nd)
a) Total	21207.92	24377.99	34974.98
b) Taka	21207.92	24377.99	34974.98
c) Foreign Currency	-	-	-
d) Project Aid	-	-	-
e) RPA	-	-	-

07. Date of Approval:

PCP	DPP
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a) Original	-	25/04/2017
b) 1 st Revised	-	22/10/2018
c) Latest Revision (2 nd)	-	07/06/2021

08. Implementation period:

	Date of Commencement	Date of Completion
a) Original	January, 2017	December, 2019
b) 1st Revised	January, 2017	December, 2019
c) Latest Revised (2 nd)	January, 2017	December, 2021
g) Actual	January, 2017	June, 2023

9. Financial Agreement (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 Effectiveness	Date of Closing	
						Original	Revised
1	2	3	4	5	6	7	8
N/A							

b) GOB:

(In Lakh Taka)

Total Amount	Loan	Grant	Cash Foreign Exchange
1	2	3	4
34974.98	-	34974.98	-

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
N/A						

9.3 Reimbursable Project Aid (RPA)

(In Lakh Taka)

RPA Amount		Amount Spent	Amount claimed	Amount Reimbursed	Remarks.
As Per DPP	As per Agreement				
1	2	3	4	5	6
N/A					

B. IMPLEMENTATION POSITION

01. Implementation Period:

Implementation Period as per DPP		Actual Implementation Period	Time Over Run (% of Original Implementation Period)	Remarks
Original	Latest Revised			
1	2	3	4	5
January/2017 to December/2019	January/2017 to June/2021	January/2017 to June/2023	116.62%	After the project was approved in the meeting of the National Economic Executive Committee (ECNEC) on 4th April 2017 Ministry of Water Resources, Development-1 Directorate Memorandum No. 42.00.0000.034.14.005.17.3 52; Dated- 07 August 2017 Decision to implement the work to Bangladesh Army as per Section 12 of PPR'2008 was taken. In this light, MoU was signed between Bangladesh Army's 19 Engineering Construction Battalion (19 ECB) and Bangladesh Water Development Board on 27 September 2017. Protective work was undertaken at 40 different locations during the formulation of the project. But floods, abnormal rains and low pressure in the past monsoon seasons have increased the number of breaches at several new locations upstream and downstream of the project's ongoing protective works. Additional 1.270 km of new protective works in the light of the recommendations of the technical committee to ensure the sustainability of the Protective works completed so far, including prevention of demolition of the said places in view of the request of the public

				representatives/people of the area need to be included. On 04.08.2019 A.D. in the review meeting held on the 2nd amendment proposal in the Ministry of Water Resources, it was decided to keep the resources for implementation of additional 1.270 km of new Protective works as per the updated rate schedule as per the estimate under separate procurement package and accordingly additional 1.270 km of new Protective works as per the approved design. Estimates are prepared and included in the DPP as per updated rates. Subsequently, as per the decision of the 2nd meeting of the Project Evaluation Committee (PEC) held at the Planning Commission on 07.10.2020, the new additional 350.00 meters of protective work has been included in the 2nd revised DPP. Thus, component wise the project cost has increased and cost has been rationale by the Technical Committee. For the above reasons, 2nd revision of DPP has been proposed and approved by competent authority. Moreover, onset of Covid-19 has seriously delayed the progress of the project during the entire year of 2020 and some months of 2021.
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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	21207.92	34974.98	34970.55	164.89%	
Taka	21207.92	34974.98	34970.55		
PA	-	-	-		

03. Project Personnel: Project work has been implemented by existing manpower of Rangamati O&M Division, BWDB, Kaptai.

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	Male	Female
1	2	3	4	5	6	7
Officer(s)	Existing manpower of the implementing agency were deployed during execution of the project.					
Staff(s)						
Total						

04. Training of project Personnel (Foreign/Local): No Provision of training in this Project.

Field of Training /Study tour/work shop/ Seminar etc.	Provision as per PP		Actual		Remarks.
	Number of Person	Man-months	Number of Person	Man months	
1	2	3	4	5	6
a) Foreign	N/A				
b) Local	N/A				

05. Component wise Progress (As per Latest approved RDPP):

(In Lakh Taka)

Items of work as per RDPP	Unit	Target (as per RDPP)		Actual Progress		Reasons for deviation (±)
		Financial	Physical (Quantity)	Financial	Physical (Quantity)	
1	2	3	4	5	6	7
(A) Revenue Component :						
Supplies and Services						
Petrol & Lubricant	LS	11.00	100.00%	11.00	100.00%	
Printing & Publication	LS	2.00	100.00%	2.00	100.00%	
Stationery, Seal & Stumps	LS	2.00	100.00%	2.00	100.00%	
Honorarium for the members of Different Committee	LS	3.00	100.00%	3.00	100.00%	
Mid Term Evaluation	LS	10.00	100.00%	10.00	100.00%	
Survey	Item	200.00	100.00%	199.70	100.00%	
Repair, Maintenance & Rehabilitation :						
Repair & maintenance of existing vehicles	Nos.	5.00	100.00%	5.00	100.00%	
Computer & Office Equipment (Photocopier Toner, Printer Cartridge & Computer accessories)	Item	1.50	100.00%	1.50	100.00%	
(A) Sub-Total of Revenue Component		234.50	100.00%	234.19	100.00%	
Capital Component:						
b1. Acquisition of Assets						
5 Door, 2350 CC Pajero Jeep	Nos.	95.00	1 Nos	91.88	1 Nos	
Survey Equipment's	Set	20.00	1 Set	19.70	1 Set	
Desktop Computer with Laser Printer & Accessories	Set	1.50	1 Set	1.50	1 Set	
Water vehicle (Speed Boat)	Nos.	52.00	1 Nos	52.00	1 Nos	
Plantation	Item	10.00	100.00%	10.00	100.00%	
Land Acquisition (2.753 Hac.)	Hac.	3000.00	100.00%	2999.00	99.96%	
Sub Total (b1):		3178.50		3174.38		
b2. Construction of works:						
Bank Protective work along the both bank of Halda river (13.740 Km)	Km	24835.85	100.00%	24835.85	100.00%	

Items of work as per RDPP	Unit	Target (as per RDPP)		Actual Progress		Reasons for deviation (±)
		Financial	Physical (Quantity)	Financial	Physical (Quantity)	
1	2	3	4	5	6	7
Construction of Flood Wall (1.715 Km)	Km	2071.89	100.00%	2071.89	100.00%	
Construction of Embankment (9.379 Km)	Km	1671.99	100.00%	1671.99	100.00%	
Re-Sectioning of Embankment (14.442 Km)	Km	1885.81	100.00%	1885.81	100.00%	
Raising and upgrading of existing road cum embankment (1.307 Km)	Km	596.95	100.00%	596.95	100.00%	
Drainage structures (5 nos)	Nos.	499.49	100.00%	499.49	100.00%	
Sub Total (b2):		31561.98		31561.98		
(b1+b2) Sub Total (b)		34740.48		34736.36		
Physical Contingency (c)	LS	0.00		0.00		
Price Contingency (d)	LS	0.00		0.00		
Grand Total (A+B+C+D)		34974.98	100.00%	34970.55	99.99%	----

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
Swapan Kumar Barua Executive Engineer 43000-69850 (5th Grade)	Full	-	Yes	01-01-2017	09-10-2019	-
Md. Nurul Islam Executive Engineer 43000-69850 (5th Grade)	Full	-	Yes	20-10-2019	15-02-2022	-
Tayan Kumar Tripura Executive Engineer 43000-69850 (5th Grade)	Full	-	Yes	05-04-2022	30-06-2023	-

07. Procurement of Transport (in nos.):

Type of transport	Number as per DPP	Procured with date	Transferred to Transport Pool with date	Transferred to Chief Engineer Office, South-East Zone with date	Condemned /damaged with date	Remarks
1	2	3	4	5	6	7
5 Door, 2350 CC Pajero Jeep	1 Nos	16-07-2019	-	14-08-2019	-	Registration No. Chatta-Metro-Gha-11-4033. Being used for Chief Engineer Office, South-East Zone area by concerned Chief Engineer.
Water vehicle (Speed Boat)	1 Nos					Being used for O&M of Project area by concerned Sub-Division Office.

08. Procurement of Goods, Works and Consultancy Service.

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

Description of procurement (goods/works /consultancy) as per bid document	Tender/Bid/ Proposal Cost (in lakh Taka)		Tender/Bid/Proposal		Date of completion of works/services and supply of goods	
	As per RDPP	Contracted Value	Invitation date	Contract signing/L.C opening date	As per Contract	Actual
1	2	3	4	5	6	7
G-03: 5 Door Pajero Jeep	95.00	95.00				
G-04: Speed Boat	52.00	52.00	28-02-22	07-03-22	06-05-22	25-04-22
W-1: Bank Protective work along the both bank of Halda river (13.740 Km)	24835.85	24835.85	11-04-18	05-05-18	30-06-23	20-10-22
W-2: Construction of Flood Wall (1.715 Km)	2071.89	2071.89	11-04-18	05-05-18	30-06-23	20-10-22
W-3: Construction of Embankment (9.379 Km)	1671.99	1671.99	11-04-18	05-05-18	30-06-23	20-10-22
W-4: Re-Sectioning of Embankment (14.442 Km)	1885.81	1885.81	11-04-18	05-05-18	30-06-23	20-10-22
W-5: Raising and upgrading of existing road cum embankment (1.307 Km)	596.95	596.95	11-04-18	05-05-18	30-06-23	20-10-22
Drainage structures (5 nos)	499.49	499.49	11-04-18	05-05-18	30-06-23	20-10-22
Total =	31708.98	31708.98				

08.2. Use of Project Consultant (s) (Foreign / Local): No provision of deploying consultant in this project.

Name of the field	Approved man month		Actual man month utilized	Remarks
	As per PP	As per contract.		
1	2	3	4	5
a) Foreign	-	-	-	-
b) Local	-	-	-	-
N/A				

09. Construction/Erection/Installation Tools & Equipment:

Description of items	Quantity (As per RDPP)	Quantity procured with date	Transferred to O&M with date	Deposed off as per rule with date	Balance	Remarks
1	2	3	4	5	6	7
Desktop Computer	2 Set	29/05/2019	-	-	2 set	Used by Bangladesh Army for official works.

C. FINANCIAL AND PHYSICAL PROGRAMME:

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

(In Lakh Taka)

Financial Year	Financial provision & physical target as per original DPP				Financial provision & physical target as per latest revised DPP			
	Total	GOB	Others	Physical %	Total	GOB	Others	Physical %
1	2	3	4	5	6	7	8	9
2016-17	3125.56	3125.56	-	14.73%	-	-	-	-
2017-18	8966.66	8966.66	-	42.17%	7336.50	7336.50	-	21.36%
2018-19	7215.87	7215.87	-	34.15%	6770.58	6770.58	-	19.70%
2019-20	1899.83	1899.83	-	08.95%	2249.08	2249.08	-	6.50%
2020-21	-	-	-	-	12854.37	12854.37	-	17.14%
2021-22	-	-	-	-	5764.45	5764.45	-	35.30%
Total	21207.92	21207.92		100.00%	34974.98	34974.98		100.00%

01. (b) Revised ADP allocation and progress:

(In Lakh Taka)

Financial Year	Allocation & Target				Taka Release	Expenditure & Physical Progress			
	Total	GOB	Others	Physical %		Total	GOB	Others	Physical %
1	2	3	4	5	6	7	8	9	10
2017-18	7336.50	7336.50	-	20.97%	7336.50	7336.50	7336.50	-	20.98%
2018-19	6770.57	6770.57	-	19.36%	6770.57	6770.57	6770.57	-	19.36%
2019-20	2249.08	2249.08	-	6.43%	2249.08	2249.08	2249.08	-	06.43%
2020-21	4923.07	4923.07	-	14.07%	4923.07	4923.07	4923.07	-	14.07%
2021-22	4196.00	4196.00	-	12%	4196.00	4191.89	4191.89	-	12.00%
2022-23	9503.57	9503.57	-	27.17%	9503.57	9499.44	9499.44	-	27.16%
Total	34978.79	34978.79	-	100.00%	34978.79	34970.55	34970.55	-	100.00%

D. ACHIEVEMENT OF OBJECTIVES OF THE PROJECT:

Sl. No.	Objectives as per DPP	Actual Achievement	Reason for shortfall, if any
1	2	3	4
01	To implement 13.740 Km. bank protection work along the both bank of Halda River at different locations in Rauzan & Hathazari Upazila and Chittagong City Corporation area.	13.740 Km. bank protection work along the both bank of Halda River at different locations in Rauzan & Hathazari Upazila and Chittagong City Corporation area has been completed.	No shortfall
02	To construct 1.715 Km. Flood Wall along the right bank of Halda River.	1.715 Km. Flood Wall along the right bank of Halda River has been completed.	No shortfall
03	To construct 9.379 Km. Embankment along the right bank of Halda River.	9.379 Km. Embankment along the right bank of Halda River has been completed.	No shortfall
04	To construct 14.442 Km. Re-Sectioning Embankment along the right bank of Halda River.	14.442 Km. Re-Sectioning Embankment along the right bank of Halda River has been completed.	No shortfall
05	Raising and upgrading of 1.307 km. existing road cum embankment.	Raising and upgrading of 1.307 Km. existing road cum embankment has been completed.	No shortfall
06	To construct the 5 no's Outlates.	To construct the 5 no's Outlates have been completed.	No shortfall

E. BENEEFIT ANALYSIS:

01. Annual Out-put:

Items of out-put	Unit	Estimated quantity expected at full capacity	Actual quantity of out-puts during the 1 st year of operation at full capacity (or during real production for newly completed project)
1	2	3	4
Providing safeguard to tidal flood & subsequent embankment erosion of following items/ establishments:			
Agricultural land	Hac	6800	6800
Homestead Pucca	Nos.	1000	1000
Homestead Semi-Pucca	Nos.	2200	2200
Homestead Kutcha	Nos.	1300	1300
Electric Line	Km	25	25
Hat, Bazar (Including Shops)	Nos.	40	40
Schools, College, Mosques UP Office, Family Planning Office & Other Government Building.	Nos.	90	90
Upazila Complex, Upazila Hospital & Government Food Godown	Nos.	10	10
Highway/ Mettaled Road	Km	20	20
Non Mettaled Road	Km	40	40
Bridge & Culverts	Nos.	45	45
Flood Control Embankment	Km	37	37
Small Industry/ Private Establishments & Handloom	Nos.	350	350
Tree	Nos	5000	5000

02. Cost/Benefit:

Item	Estimated	Actual
(1) Benefit cost of the project		It will be evaluated later by concern directorate of BWDB & IMED.
(i) Financial	1.79:1.00	
(ii) Economic	-	
(2) Internal rate of return		
(i) Financial	21.52%	
(ii) Economic		

(3) Please give reason for shortfall, if any, between the estimated and actual benefit: No Shortfall.

F. MONITORING AND AUDITING.**01. Monitoring:**

Name & Designation of the inspecting official	Date of inspection	Identified Problems	Recommendations
1	2	3	4
Ministry/Agency:			
Mr. Anisul Islam Mahmud, MP Hon'ble Minister MoWR.	09-12-2017	Not found	Instructed to expedite works & to complete within the stipulated time.
Mr. Dr. Mujibur Rahman Howlader Chairman, National River Conservation Commission.	21-04-2018	Not found	Instructed to expedite works & to complete within the stipulated time.
Mr. Mahmudul Islam Additional Secretary, MoWR.	09-02-2019	Not found	Project progress was satisfactory.
Mr. Mahmudul Islam Additional Secretary, MoWR.	08-03-2019	Not found	Project progress was satisfactory.
Mr. A K M Enamul Hoque Shameem, MP Hon'ble Deputy Minister of MoWR.	02-05-2019	Not found	To increase the efficiency of the project by expanding certain components and constructing new outlets.
Mr. Kabir Bin Anwar Secretary, MoWR.	03-06-2019	Not found	Project progress was satisfactory.
Mr. Kabir Bin Anwar PAA Senior Secretary, MoWR.	26-01-2021	Not found	Project progress was satisfactory.

Name & Designation of the inspecting official	Date of inspection	Identified Problems	Recommendations
1	2	3	4
Mr. Kabir Bin Anwar PAA Senior Secretary, MoWR.	26-01-2021	Not found	Project progress was satisfactory.
Mr. Kabir Bin Anwar PAA Senior Secretary, MoWR.	09-10-2022	Not found	Project progress was satisfactory.
Mid Term Evaluation			
Mr. Mahmudul Islam Addl. Secretary (Dev.), MoWR.	03-10-2020 to 04-10-2020	Not found	-
Mr. Mantu Kumar Biswas Addl. Secretary (Planning), MoWR.	03-10-2020 to 04-10-2020	Not found	-
Mr. MD. Afzal Hossen Director, IMED.	03-10-2020 to 04-10-2020	Not found	-
Mrs. Dipanwita Saha Deputy Secretary (Planning-1), MoWR.	03-10-2020 to 04-10-2020	Not found	-
Mr. A H M Anwar Pasha Deputy Secretary (Dev. -1), MoWR.	03-10-2020 to 04-10-2020	Not found	-
Mr. A K M Abul Kalam Azad Deputy Secretary (Deputy Chief), Planning Commission.	03-10-2020 to 04-10-2020	Not found	-
Mr. Md. Saifur Rahman Senior Asst. Secretary, (Senior Asst. Chief) Planning Commission.	03-10-2020 to 04-10-2020	Not found	-
Mr. Md. Siddiqur Rahman Senior Asst. Secretary, MoWR.	03-10-2020 to 04-10-2020	Not found	-
Mr. Shibendu Khastagir Superintending Engineer, Chattogram O&M Circle BWDB, Chattogram.	03-10-2020 to 04-10-2020	Not found	-
Mr. Abu Bakkar Siddiq Executive Engineer Chief Monitoring, BWDB, Dhaka.	03-10-2020 to 04-10-2020	Not found	-
IMED			
Mrs. Lasmi Chakma Assistant Director, IMED.	30-04-2018	Not found	(1) Supervision should be strengthened including quality assurance as per the design and specification of the ongoing work of the project.

Name & Designation of the inspecting official	Date of inspection	Identified Problems	Recommendations
1	2	3	4
			(2) As per the work order, all the contractors have to ensure the completion of CC block dumping along with geo bag dumping as soon as possible. (3) Monitoring should be strengthened along with proper instructions to the concerned engineers in the project area about the ongoing work, so that the contractors complete their activities properly. (4) Allocation should be provided as per DPP/RDPP. (5) Block construction and placing should be completed urgently by taking advantage of the dry season.
Mrs. Lasmi Chakma Assistant Director IMED.	16-01-2019	Not found	-
Mr. Md. Saiful Islam Director General IMED.	14-05-2022	Not found	-
Others			
Mr. Anisul Islam Mahamud Member of Parliament Chattogram-05	Several times	Not found	Instructed to expedite works & to complete within the stipulated time.

02. Auditing during and after Implementation:

2.1. Internal Audit

Period of Audit	Date of Submission of Audit Report	Major findings/objectives	Whether objections resolved or not.	Comment
1	2	3	4	5
27 to 29 Nov 2018 (Headquarter 34 Engineer Construction Brigade, Bangladesh Army)	29 Nov 2018	Nil	-	-
22 to 24 Sep 2019 (Headquarter 34 Engineer Construction Brigade, Bangladesh Army)	24 Sep 2019	Nil	-	-
25 to 28 Oct 2021 (Headquarter 34 Engineer Construction Brigade, Bangladesh Army)	28 Oct 2021	Nil	-	-
24 to 26 Jul 2022 (Headquarter 34 Engineer Construction Brigade Audit Team, Bangladesh Army)	26 Jul 2022	Nil	-	-

2.2. External Audit

Period of Audit	Date of Submission of Audit Report	Major findings/objectives	Whether objections resolved or not.	Comment
1	2	3	4	5
19 Oct 2019 (Army Headquarter Audit Team)	19 Oct 2019	Nil	-	-
09 Nov 2020 (Army Headquarter Audit Team)	09 Nov 2020	Nil	-	-
27 to 28 Feb 2022 (Army Headquarter Audit Team)	28 Feb 2022	Nil	-	-

G. DESCRIPTIVE REPORT

1. General Observations/Remarks of the Project on:

1.1 Background:

Flood and river bank erosion in Bangladesh is a recurring event of catastrophic nature. In general, each year, about 20% to 30% of the area of the country is inundated in normal flood, which may be as high as 60% in extreme case as happened in 1987, 1988, 1998, 2004 and 2007. In flood 2007, 97% of the project area was inundated. Similarly every year 2000 ha of land is lost in the River due to river bank erosion.

Major erosion of the river banks has been observed in different locations of the Halda River in recent year. Valuable infrastructures like roads, bridges, hydraulic structures, markets, homestead, Madrasa, school and agricultural land etc. are now under serious threat.

The Halda River originates from Batniali hill in Khagrachhari District and falls into the Karnafuli River after flowing through 60 km. in the District of Khagrachhari and Chittagong. It is also a flashy river and meandering in nature. Erosion rate has been increased due to flash flood and rapid fluctuation of water level due to tidal influence.

The proposed project will save the Flood Control Embankment of **Karnafuli Irrigation Project (Halda Unit)**. The **Karnafuli Irrigation Project (Halda Unit)** is one of the successful FCDI project of BWDB. The project is located about 10.00 km. east of Chittagong Town and situated at both the banks of Halda River. The area of the project is about 12500 hectare comprises 2(two) Upazila Raozan & Hathazari in Chittagong District. At the pre-project condition about 12 lakh inhabitants of this area were suffered badly by the severity of floods and drought in almost every year with resultant havoc in human lives and properties and uncertainty in agricultural production. To overcome these, **Karnafuli Irrigation Project (Halda Unit)** was taken up with the multiple objectives/targets of mitigate flood hazards and drought by providing comprehensive FCDI facilities and safety of local dwellers as well as enhancing economic and environmental condition.

Therefore, it is the long standing demand of the people of Chittagong District along with other vulnerable areas to safeguard **Karnafuli Irrigation Project (Halda Unit)** as well as their immovable properties and remedy of human hazards against devastating erosion of the Halda River.

On the DPP of the project after execution of the project, the following positive impacts were expected to happen Boalkhali Irrigation Project.

a) Flood Mitigation: Bank protective work can help mitigate the risk of flooding in the Hathazari and Raozan Upazila areas. This is crucial for safeguarding the lives and properties of the people living in these regions, especially during the monsoon season.

b) Erosion Control: Halda River is susceptible to erosion, which can lead to land loss and displacement of communities. Bank protective measures can help stabilize the riverbanks and prevent erosion, thereby protecting valuable agricultural land and infrastructure.

c) Biodiversity Conservation: The Halda River is known for its biodiversity, including various fish species. Bank protection can help preserve the river's natural habitat and support aquatic life by preventing further erosion and sedimentation.

d) Agricultural Benefits: Farmers in the region depend on the fertile land along the riverbanks for agriculture. Bank protective work ensures the preservation of this land, contributing to food security and the livelihoods of local farmers.

e) Infrastructure Protection: Infrastructure such as roads, bridges, and utilities often run parallel to rivers. Protecting the riverbanks helps safeguard these vital infrastructure elements, ensuring smooth transportation and connectivity in the area.

f) Economic Opportunities: The improved stability and protection of the riverbanks can attract investment and economic activities to the region. This can lead to the creation of jobs and opportunities for local residents.

g) Tourism and Recreation: A well-preserved Halda River and its surroundings can become a potential tourist attraction. This can boost the local economy through tourism-related businesses and recreational activities.

h) Water Quality Improvement: Bank protective work can help reduce sedimentation and pollution in the river, leading to improved water quality. This benefits both the environment and the people who depend on the river for drinking water and other needs.

i) Community Resilience: Protection against riverbank erosion and flooding enhances the resilience of local communities to climate-related challenges. It reduces the need for emergency responses and disaster relief efforts.

j) Cultural and Historical Preservation: The Halda River holds cultural and historical significance for the region. Protecting its banks can help preserve cultural heritage and traditions associated with the river.

k) Sustainable Development: Overall, bank protective work contributes to the sustainable development of the region by balancing environmental protection with economic growth and community well-being.

It's important to note that the success of such protective measures depends on careful planning, sustainable engineering practices, and community engagement to ensure that the positive impacts are maximized while minimizing any potential negative consequences on the environment or local communities.

1.2 Justification/Adequacy:

Chittagong District is prone to seasonal flooding, especially during the monsoon season. Bank protective work is essential to mitigate the risk of flooding and safeguard lives and properties in these areas. This is a significant justification, as it directly addresses a pressing problem. Halda River is susceptible to erosion, which can lead to land loss and displacement of communities. Adequate bank protective measures help stabilize riverbanks and prevent erosion, preserving valuable agricultural land and infrastructure. This is crucial for maintaining the local economy and livelihoods. The infrastructure in

Hathazari and Rauzan Upazila, such as roads, bridges, and utilities, is critical for connectivity and economic development. Protecting the riverbanks is necessary to safeguard this infrastructure, which benefits the entire region. The Halda River is known for its biodiversity, including various fish species. Protecting the riverbanks contributes to environmental conservation by preserving the river's natural habitat. This justification aligns with the importance of preserving ecosystems and biodiversity. Bank protective work contributes to reducing sedimentation and pollution in the river, leading to improved water quality. Access to clean water is a fundamental need, and this justification addresses it. The bank protective work aligns with the principles of sustainable development by balancing environmental protection with economic growth and community well-being. It ensures that development in the region is conducted in a responsible and sustainable manner.

1.3 Objectives:

The objectives of the project is to provide safety of the flood control embankment of Karnafuli Irrigation Project.(Halda Unit), human lives, properties and improve economic activities by construction of protective works at vulnerable location along the both bank of Halda River. Valuable establishments valued Tk. 199890.00 lakh are supposed to be saved by implementation of proposed protective works.

- The main objectives of the project is to implement 13.740 Km. bank protection work along the both bank of Halda River at different locations in Rauzan & Hathazari Upazila and Chittagong City Corporation area.
- To construct 1.715 Km. Flood Wall along the right bank of Halda River.
- To construct 9.379 Km. Embankment along the right bank of Halda River.
- To construct 14.442 Km. Re-Sectioning Embankment along the right bank of Halda River.
- Raising and upgrading of 1.307 Km. existing road cum embankment.
- To construct 5 nos outlets.
- To sustain socio-economic uplift and enhance natural security against river erosion.
- To save the agricultural products of 25500 ha. Per annum inside the Flood Control Embankment of KIP.
- To maintain river alignment in a durable that way for sustainable river management.
- To mitigate environmental impact and ecological imbalance by protection of bank line.

1.4 Project Revision with Reasons:

During the implementation period, bank protective work was carried out at 40 different locations along the riverbanks. During the monsoon season many more locations were disrupted due to floods, heavy rainfall, hilly terrain, and ebb-tide where Protective work was needed for the protection of banks. Based on the recommendation of the Honarable Deputy Minister of Water Resources, Mr. AKM Enamul Hoque Shameem, MP the construction of floodwall is expanded in densely populated areas and along with the construction of new outlets, which increases the project's expenditure. Due to excessive rainfall, abnormal flooding, and landslides, a significant portion of the existing embankment has been damaged, causing a shift in the bank line towards the country's side and it increases expenditure of project cost.

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

Effective Erosion Control: The design of the bank protective work should be based on sound engineering principles to effectively control erosion. The rationale here is to ensure that the design is technically sound and capable of achieving its erosion control objectives. The design should consider the preferences and needs of local communities. Involving community stakeholders in the design process ensures that the protective work aligns with their priorities and doesn't negatively affect their way of life.

Environmental Preservation: The concept of protecting the riverbanks aligns with the goal of preserving the ecological integrity of the Halda River. It acknowledges the importance of maintaining biodiversity and a healthy river ecosystem.

High-Risk Areas: The selection of locations for bank protective work should be based on an assessment of high-risk areas prone to erosion and flooding. The rationale is to target interventions where they are most needed to maximize the benefits. The location should balance the need for environmental preservation with socioeconomic development. This requires careful consideration of trade-offs and compromises in the selection process.

Seasonal Considerations: The timing of the project should consider seasonal factors, particularly monsoon seasons when the risk of flooding and erosion is highest. Implementing protective work before the onset of such seasons is essential to reduce the risk. The timing of the project should align with budget availability and the availability of necessary resources, including construction materials and skilled labor.

The progressive bank line shifting of the Halda River in both bank at a length of 13.740 Km located at different places of Raozan & Hathazari Upazila in Chittagong has endangered the very existence of Karnafuli Irrigation Project (Halda Unit). In this locality annual rate of bank erosion of the river is 20 m to 30 m. **Without immediate erosion mitigation measures further retirement of embankment and loss of important establishment and agricultural land cannot be stopped.** The proposed project will not only protect the embankment of Karnafuli Irrigation Project. (Halda Unit) including its important establishment but also safeguard physical damage and human sufferings.

Failure of the embankment as well as project facilities of the Karnafuli Irrigation Project. (Halda Unit) due to river erosion will have socio-economic and environmental impacts on lives and properties of 12 lakh inhabitants of the project area will be severely endangered. It is anticipated that if the erosion continues huge land including important Govt. and private establishment will be eroded over the next coming year. To save this important establishments and assets from near ruination due to river erosion, the proposed protective work required to be executed on priority basis. Otherwise substantial losses of properties and infrastructures will be incurred.

3. Brief Description on Planning and Financing of the Project and its applicability:

- **Project Identification:**

The Honorable Minister Mr. Barrister Anisul Islam Mahmud Ministry of Water Resources has gave directives to the field Officers to prepare the proposed DPP with river bank erosion protection and flood control of adjacent area Right Bank of Halda River. In addition the Honorable Member of Parliament Mr.A.B.M.Fazle Karim Chowdhury issued a D.O. Letter to the Honorable Minister, Ministry of Water Resources requesting him to take up the proposed project to solve the River erosion,water Mitigation,protect of Public & Private Properties & Natural Resources and Sustainable Socio- economic & tertiary Sector improved.

- **Project Preparation:**

Due to the severe River erosion,water Mitigation,protect of Public & Private Properties & Natural Resources at different locations along the both bank of Halda River by Bank Protective Work at different locations in Hathazari & Rauzan Upazila in Chittagong District many cultivate lands,villages and infrastructures are engulfed in Halda River. To mitigate those problem a Technical Committee constituted by BWDB provided a study report on the project area in September,2014.According to the Technical Report Rangamati O&M Division,BWDB,Kaptai has prepared the DPP and processed for approval.

Appraisal: The PEC meeting was held on 12-12-2016 at Planning Commission.

- Credit Negotiation : Not Applicable
- Credit Agreement : Not Applicable
- Credit Effectiveness : Not Applicable
- Loan Disbursement : Not Applicable
- Loan Conditionalities : Not Applicable
- Project Approval: The project was approved by ECNEC on 4th April,2017,1st Revised was approved by MoWR on 22th October,2018 & 2nd Revised was approved by ECNEC on 7th June,2021.
- Others (if any): Nill.

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.

Beneficiaries of the project have clear knowledge about the Objectives of the project.

4.2. Programme for use of created-facilities of the project:

The program for the use of created facilities should be collaborative, involving local government bodies, non-governmental organizations, community leaders, and environmental experts. It should be designed to ensure the sustainable and responsible use of the protected riverbanks while benefiting both the environment and the communities that depend on the Halda River.

4.3. O & M programme of the project:

As the project has been completed, major repair/rehabilitation works will be accomplished from regular O&M budget of BWDB.

4.4. Impact of the project –

4.4.1 Direct

- Bank protective work reduces the risk of flooding in the project area.
- The primary purpose of bank protective work is to control riverbank erosion. By stabilizing the riverbanks, erosion is minimized, and valuable agricultural land and infrastructure are protected from erosion-related losses.
- Farmers in the region gets benefit directly as their agricultural land along the riverbanks is preserved. This ensures the continuity of agricultural activities and contributes to local food security.

4.4.2. Indirect

- Economic growth and increased opportunities can indirectly lead to better access to education and healthcare services for local communities. Improved livelihoods can enable families to invest more in their children's education and health.
- A healthier river ecosystem indirectly benefits the environment beyond the immediate vicinity. A stabilized river can reduce sedimentation downstream, leading to better water quality and less siltation in areas further downstream.
- Development and resilience of the Hathazari and Rauzan Upazila areas in Chittagong District, fostering long-term sustainability and improved quality of life for local residents.

4.5. Transfer of Technology and Institutional Building through the project:

Not Applicable.

4.6. Employment generation through the project:

A large number of skilled/unskilled workers were employed during construction period.

4.7. Possibility of Self employment:

The preservation of agricultural land along the riverbanks can lead to increased agricultural production. Local farmers can diversify their activities, such as growing high-value crops or engaging in organic farming, and sell their produce in local markets or to nearby urban areas. With improved riverbank areas and a more attractive environment, there is potential for the growth of eco-tourism and hospitality businesses. Local residents can set up guesthouses, restaurants, tour guides, and transportation services to cater to tourists and visitors. With improved infrastructure and connectivity, there may be opportunities for self-employment in the transportation sector, including running bicycle rental services, operating auto-rickshaws, or providing taxi services.

4.8. Possibility of women-employment opportunity:

Women can participate in agro-based activities, including farming, horticulture, and gardening. They can grow vegetables, fruits, or herbs on the preserved agricultural land along the river banks. Participate in community-based enterprises, such as cooperative farming groups or handicraft cooperatives, which involve collective management and income-sharing.

4.9. Women's participation in development:

Yes.

4.10. Probable Impact on Socio-Economic activity:

The primary beneficiaries of bank protective work will be the local communities living along the Halda River. By safeguarding their homes, farmland, and assets from erosion and floods, this initiative will help protect their livelihoods. Farmers will be able to continue their agricultural activities without fear of losing their land to the river. Bank protective work is a crucial component of disaster risk reduction. By mitigating the impact of floods and erosion, it helps reduce the frequency and severity of disasters, which can save lives and reduce the economic burden on the government in terms of disaster response and recovery. The protection of the riverbanks can also encourage infrastructure development in the area. Improved roads, bridges, and transportation networks can facilitate trade and commerce, making it easier for businesses to thrive and expand.

4.11. Impact on environment:

This project can help preserve natural habitats along the riverbanks, which are home to various plant and animal species. By stabilizing the banks and reducing erosion, it can protect these ecosystems from destruction. Reduced erosion and sedimentation can lead to improved water quality in the river. This can benefit aquatic life and contribute to the overall health of the ecosystem.

4.12. Sustainability of the project:

The project is sustained but requires periodic maintenance.

4.13. Contribution to poverty alleviation/reduction:

By protecting agricultural land and homes along the riverbanks from erosion and flooding, the project helps safeguard the livelihoods of local communities. Farmers can continue to cultivate their land, ensuring a stable source of income and food security. This prevents the displacement of vulnerable populations, which is often a consequence of riverbank erosion, and helps maintain their economic stability.

4.14. Opinion of the public representatives, local elite, local administration, teachers, religious leaders, women's representatives etc:

Positive remarks regarding the project.

4.15. Contribution of Micro-credit programmes and Comments on overlapping with any NGO activities: Not Applicable.

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

- | | | | |
|-------------|--|----------|---|
| 5.1 | Project Management | : | N/A. |
| 5.2 | Project Director | : | N/A. |
| 5.3 | Land Acquisition | : | N/A. |
| 5.4 | Procurement | : | N/A. |
| 5.5 | Consultancy | : | N/A. |
| 5.6 | Contractor | : | N/A. |
| 5.7 | Manpower | : | N/A. |
| 5.8 | Law & Order | : | N/A. |
| 5.9 | Natural calamity | : | During the project period due to the COVID-19 pandemic, ongoing work has slowdown, and progress at work has decreased, but work has not stopped.
During the post-COVID period, the project progress returns to normal. |
| 5.10 | Project financing, allocation and release | : | N/A. |
| 5.11 | Design formulation/approval | : | N/A. |
| 5.12 | Project aid disbursement and re-imbursement | : | N/A. |
| 5.13 | Mission of the development partners. | : | N/A. |
| 5.14 | Time & Cost Over-run | : | 118.46% time overrun & 64.9% cost overrun of original DPP. |
| 5.15 | Project Supervision/Inspection | : | N/A. |
| 5.16 | Delay in Decision | : | N/A. |
| 5.17 | Transport | : | N/A. |
| 5.18 | Training | : | N/A. |
| 5.19 | Approval | : | N/A. |
| 5.20 | Others | : | N/A. |

6. Remarks & Recommendations of the Project Director :

Our foremost goal is to shield our communities from the devastating impact of riverbank erosion and flooding. By securing their homes and agricultural land, we are not only protecting their immediate livelihoods but also ensuring their safety and security. The Halda River is a natural treasure, known for its unique biodiversity. We are committed to implementing protective measures that respect and preserve the river's natural ecosystems. Our approach seeks to balance development with the conservation of this invaluable environment. Building resilience is at the core of our project. By reducing the vulnerability of our communities to natural disasters, we empower them to face future challenges with strength and adaptability.

During the implementation of this project, members of different committees & monitoring authorities visited project sites and gave their opinions/directions which have helped implementation of the project within approved time. Project was implemented properly following approved design/drawing and specification. The quantity and quality of the physical works (pre and post work of earth, quantity and quality of cc blocks & geo-bags) were ensured by Task force committee of BWDB and concerned officials of BWDB. Regular PIC & PSC meetings on the projects were held, providing necessary guidance to conduct the project. Mid-term evaluation committee also visited the project on 3th October, 2020 to provide valuable guidance for project implementation.

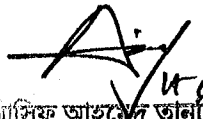
After successful implementation of this project, a large portion of Hathazari & Rauzan upazila in union has been reduces the risk of flooding in the project area, control riverbank erosion. By stabilizing the riverbanks, erosion is minimized, and valuable agricultural land and infrastructure are protected from erosion-related losses, Farmers in the region benefit directly as their agricultural land along the riverbanks is preserved. This ensures the continuity of agricultural activities and contributes to local food security.

Recommendation:

- Establish a comprehensive monitoring and maintenance program for the protective infrastructure, embankments, Road-Cum embankment, Floodwall and Drainage Outlates.
- Conduct routine inspections to identify any signs of erosion, structural damage, or breaches in protective measures.
- Budget for ongoing maintenance activities and ensure that the responsible authorities have the necessary resources and expertise.
- Develop and regularly update disaster preparedness and response plans for the region, taking into account the changed landscape and reduced vulnerability to flooding and erosion.
- Continue environmental monitoring to assess the long-term impact of the project on the Halda River ecosystem.

- If the components of a implemented project are not properly maintenance, the project's objectives will not be fulfilled. Repair & Maintenance of the project's components are necessary to achieve its goals and benefit the general public. For this purpose, an annual allocation from the Non-Development Revenue (NDR) account needs to be budgeted.

Date : 11/10/2023


আসিফ আহমেদ তানজিল
জেঃ কর্ণেল
প্রকল্প পরিচালক

Signature and seal
of the Project Director/Manager

Date : 08/11/2023

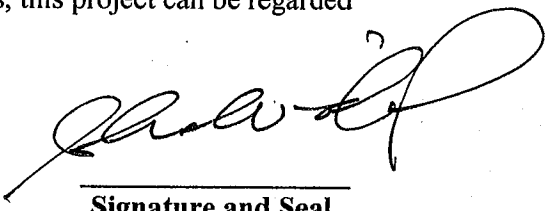

(Tayan Kumar Tripura)
Executive Engineer

Signature and Seal
of the Project Director/Manager

7. Remarks/Comments of Agency Head

This project was taken to protect both bank of Halda river in Hathazari and Rauzan upazilla of the Chittagong district. This project has been completed successfully by constructing river bank protection work, embankment, re-sectioning of embankment and repairing drainage structures. As a result, risk of river bank erosion has been mitigated and the socio-economic condition of people living in the project area has improved. Thus, this project can be regarded as a successful one.

Date : 03/12/2023


Signature and Seal
(S.M. Shahidul Islam)
ID NO: 650307001
Director General
BWDB, Dhaka.

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

The project has been completed successfully. Regular maintenance and monitoring should be ensured by Bangladesh Water Development Board for the sustainability of the project.

Date :

Signature and Seal

