



Ministry of Water Resources
Bangladesh Water Development Board

Coastal Embankment Improvement Project, Phase-1
(CEIP-1)



Mid Term Evaluation Report

February 2022

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Executive Summary

The Government of Bangladesh obtained a Credit of US\$ 375 million from the International Development Association (IDA) and a Grant of US\$ 25 million from the Climate Investment Fund (CIF) to finance the cost of the Coastal Embankment Improvement Project, Phase -1 (CEIP-I). The objective of the investment is to rehabilitate polder embankments and strengthen their long-term durability through heightened embankment, improved drainage, and foreshore afforestation.

For proper management and smooth Implementation of the works the 10 Polders (see Figure 1) have been split up into two Packages as mentioned below:

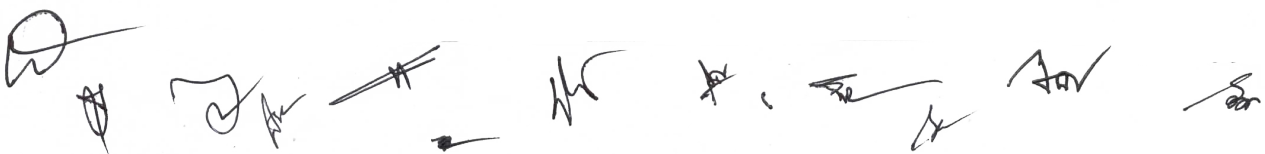
- Package-1: Polder- 32, 33, 35/1 and 35/3;
- Package-2: Polder-39/2C, 40/2, 41/1, 48, 47/2 and 43/2C;

The project is being implemented in 10 polders of Khulna, Bagerhat, Jalokathi, Patuakhali and Barguna and Pirojpur districts. The members of the committee are divided into the following two groups considering the size of the project area. Group-1 members visited Package W-02 area on 14 & 15 January, 2022 (polder 39/2C and polder 48 covering Pirojpur and Patuakhali district) and Group-2 members visited Package W-01 area (polder 35/3 and polder 33 covering Bagerhat and Khulna district) on 7 & 8 January, 2022. The MTR committee members tried to visit at least one structure of each and every construction item during the visit. During the visit, committee members physically measured the slope and crest level of embankment, size of block, checked the slope protection work comparing with approved drawings, made quarry about quality controlling procedure of CEIP-1, resettlement activities, environmental activities and land acquisition activities.

The committee had discussion with local community regarding the benefit of the project. Local people expressed their satisfaction and informed that saline water intrusion has been prevented and they are now safe against cyclone. Moreover, the committee discussed with the WMA committee members regarding operation and maintenance of gates of drainage r and flushing regulators. WMA committee members informed the committee that they received training on WMG management, gate operation, integrated pest management, social afforestation and value chain.

The committee found the overall quality of work in good and acceptable position. Participation of local community in physical work, inclusion of women member in WMG, inclusion of vulnerable people in social afforestation group is the remarkable feature of CEIP-1. However, for better monitoring and quality work committee suggested for i) testing of CC blocks and materials on regular basis ii) rechecking post work iii) giving emphasis on land acquisition iv) close monitoring from Detailed Design, Construction Supervision & Project Management Support consultant and Monitoring & Evaluation Consultant v) ensuring proper composition of plant species in afforestation etc.

The team expressed their satisfaction on overall quality of work but instructed to give emphasis on timely completion of work.



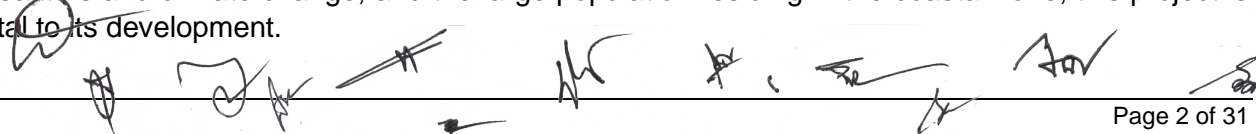
1. Chapter One: Project Description

1.1 Project Background

The coastal belt of Bangladesh is consists of 139 polders covering 47201 Sq. KM area (32% of the country) with 41 million people (29% of total population). The polders were developed in early 60's to protect against tidal floods, salinity intrusion and to prepare the land suitable for agricultural activities in the coastal area. Bangladesh Water Development Board completed 139 polders and by means of which about 1.2 million hectares of land is under permanent agriculture within the coastal embankment system. At that time the polders were designed to keep the land safe from the daily tide to allow for agriculture activities. But the coastal embankment system of Bangladesh was originally designed to protect against the tides and the associated salinity intrusion, without much attention to storm surges. Recent cyclones brought substantial damage to the embankments and further threatened the integrity of the coastal polders. In addition to breaching of the embankment due to cyclones, siltation of peripheral rivers surrounding the embankment caused the coastal polders to suffer from water logging, which lead to large scale environmental, social and economic degradation. Poor maintenance and inadequate management of the polders have also contributed to internal drainage congestion and heavy external siltation. As a result, in some areas soil fertility and good agriculture production are declining because of water logging and salinity increase inside polders. The above reasons have led the Government to re-focus its strategy on the coastal area from one that only protects against high tides to one that provide protection against frequent storm surges. The long-term objective of the Government is to increase the resilience of the entire coastal population to tidal flooding and natural disasters by upgrading the whole embankment system. With an existing network of embankment of nearly 5,700 km long with 139 polders, the magnitude of such a project is daunting and requires prudent planning. Hence a multi-phased approach of embankment improvement and rehabilitation will be adopted over a period of 15 to 20 years. The proposed Coastal Embankment Improvement Project, Phase 1 is the first phase of this long-term program.

In last two decades cyclone rate and intensity have increased remarkably due to climate change. Sidor in 2007 and Aila in 2009 is the most remarkable example of climate change impact. After the implementation of CERP-II in 2003, Cyclone Sidor struck in 2007 and then Cyclone Aila in 2009, causing extensive damage and losses including loss of life. In order to save the coastal polders from the impact of climate change, Bangladesh Water Development Board has conducted an intensive study. The study shows that to rehabilitate all 139 polders to make compatible to face the impact of cyclone and thunderstorm caused by climate change a fund of USD 2.40 Billion is required and recommended to take projects phase by phase in 15 to 20 years. In this connection Bangladesh Water Development Board has taken "Coastal Embankment Improvement Program" and in 2013 at first phase started Coastal Embankment Improvement Project, Phase -1 (CEIP-1) to rehabilitate 17 polders in 6 coastal districts. The Government of Bangladesh obtained a Credit of US\$ 375 million from the International Development Association (IDA) and a Grant of US\$ 25 million the Climate Investment Fund (CIF) to finance the cost of the Coastal Embankment Improvement Project, Phase -1 (CEIP-I).

The objective of the investment is to support the Government of Bangladesh's efforts to protect the population and their productive assets in the polders and strengthen the embankments' long-term durability through embankment heightening, improved drainage, and foreshore afforestation. The project aims at restoration of the agriculture sector within the polder areas and rehabilitation of infrastructure with designs of a climate resilient standard that can guard against both tidal flooding and frequent storm surges. Considering Bangladesh's high level of vulnerability to natural disasters and climate change, and the large population residing in the coastal zone, this project is vital to its development.



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1.2 General information about the project

- Project Title:** : Coastal Embankment Improvement Project, Phase-1(CEIP-1) in Jhalokathi, Khulna, Bagerhat, Pirojpur, Barguna and Patuakhali district.
- Estimated Cost** : In Lakh BDT 328000.00 (IDA US\$ 375.00 million and PPCR USD\$ 25.00 Million)
- Commencement Date** : July 2013 (As per approved DPP)
- Completion Date:** : June 2022 (Revised)
- Proposed Completion Date** : December 2023
- Location of the Project** : The Project covers 10 polders in the six coastal districts – Khulna, Bagerhat, Jhalokathi, Patuakhali, Barguna and Pirojpur (see Figure 1).

Bangladesh Water Development Board (BWDB)
Coastal Embankment Improvement Project, Phase-1 (CEIP-1)

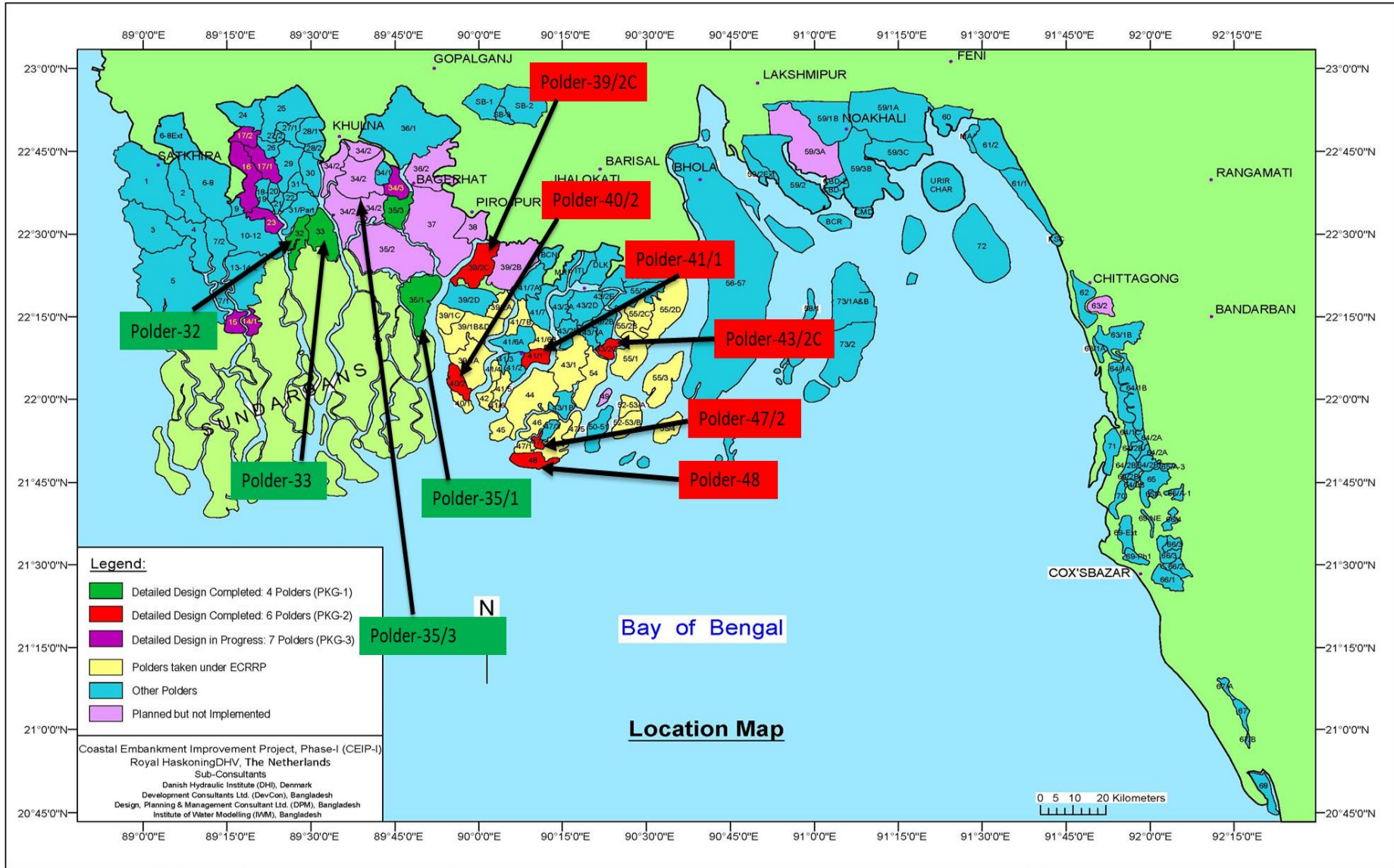


Figure 1: Map of the 10 CEIP-I Polders

1.3 The purpose of the project

The main objective of the Coastal Embankment Improvement Project, Phase-1 (CEIP-1) is to rehabilitate polder embankments and strengthen their long-term durability through heightened embankments, improved drainage, and foreshore afforestation. The project aims at restoration of the agriculture sector within the polder areas and rehabilitation of infrastructure with “build back better” designs that can guard against both tidal flooding and frequent storm surges.

While investments over the last 50 years usually addressed damage caused by previous disasters, CEIP is the first comprehensive program to address flooding and storm surge risk strategically. The project development objectives (PDOs) as approved and agreed upon by the GoB and the World Bank are to:

- “(a) increase the area protected in selected polders from tidal flooding, salinity intrusion and frequent storm surges, which are expected to worsen due to climate change;
- (b) improve agricultural production by reducing saline water intrusion in selected polders; and
- (c) improve the Government of Bangladesh’s capacity to respond promptly and effectively to an eligible crisis or emergency.”

1.4 The components of the project

CEIP-I has been designed to reflect this Results Framework and achieve the planned results via five components. Four components are related to the improvement of the polders and the knowledge base and the fifth is for emergency measures. Most components have some sub components, as shown below:

Component A – Rehabilitation and improvement of polders

- A1: Rehabilitation and improvement of polders
- A2: Afforestation

Component B – Implementation of Social & Environmental Management Frameworks and Plans

- B1: Implementation of Social Action Plans
- B2: Implementation of Social Management and Resettlement Policy Framework (SMRPF) and Resettlement Action Plans (RAPs)
- B3: Implementation of EMF and EMPs

Component C – Construction Supervision, Monitoring and Evaluation of Project and Coastal Zone Monitoring

- C1: Detailed Design and Construction Supervision
- C2: Third Party Monitoring and Evaluation of Project
- C3: Long Term Monitoring, Research and Analysis of Bangladesh Coastal Zone

Component D – Project Management, Technical assistance, Training and Strategic Studies

Component E – Contingent Emergency response

1.5 Key activities of the project as per approved DPP/ RDPP

1.5.1 Implementation of SAP and EMP

- a) Resettlement
- b) Consultancy service to Implement (a) Social afforestation; (b) social action plan (incl. setting up WMOs)

1.5.2 Construction Supervision, M&E, Delta Monitoring

- Consultancy Services for Construction Supervision & Detailed Engineering Design of remaining 12 Polder under CEIP, Phase-1
- Third Party Monitoring & Evaluation (M&E) of overall project implementation, RAP & EMP
- Consultancy Service for Long term monitoring, research of Bangladesh Coastal Zone

1.5.3 Project Management, TA, Training, Strategic Studies

- Project management support and audits
- Consultancy Services for Institutional Capacity building, technical assistance and training to BWDB personnel
- Consultancy Services for Feasibility studies and preparation of design for the following Phases of CEIP

1.5.4 Overseas Training and Institutional Capacity Building of BWDB personnel

1.5.5 Acquisition of assets

1.5.6 Afforestation

1.5.7 Acquisition / Purchase of Land

1.5.8 Construction works

1.6 Civil Work Packages

Civil Work Packages: Work Packages Details

Package no.	Polder	Contract amount/ Estimated cost
Package W-01	Polder 32 Polder 33 Polder 35/1 Polder 35/3	<p>Khulna, Dacope Khulna, Dacope Bagarhat, Sharankhola and Morelgonj Bagerhat, Rampal and Bagarhat Sadar</p> <p>Original Contract amount: BDT 696.9113 Crore Revised Contract Amount: BDT 724.366 Crore Contract period: Original: 36 months (26 Jan'16 to 25 Jan'19) Revised: 62 Months (26 Jan'16 to 31 March 2022).</p>
	<p>Signing of Contract: 01 November, 2015. Contractor: The First Engineering Bureau of Henen Water Conservancy, China. Physical Progress up to December 31, 2021 is 95.00% and financial progress is 85.80%</p>	
Package W-02	Polder 39/2C Polder-40/2 Polder 41/1 Polder 43/2C Polder 47/2 Polder 48	<p>Pirojpur, Bhandaria, Matbaria & Jhalakhati, Kathalia Barguna, Pathargata Barguna, Barguna Sadar Patuakhal, Galachipa Patuakhali, Kalapara Patuakhali, Kalapara</p> <p>Original Contract amount: BDT 1089.95646 Crore Revised Contract Amount: BDT 1148.787 Crore Contract period: Original: 42 months (12 July'17 to June'20) Revised: 66 Months (July'17 to June, 2022)</p>
	<p>Signing of Contract: 08 March, 2017. Contractor: Chongqing International Construction Corporation (CICO), China Physical Progress up to December 31, 2021 is 68% and Financial Progress is 58.17%</p>	

1.7 Details of the progress of construction work of the project

1.7.1 Physical Progress - Summary of BoQ Item Wise Physical Progress up to December 2021 of Package W-01 & Package W-02

Table 1-1: Summary of Physical Progress of Package-1 & 2

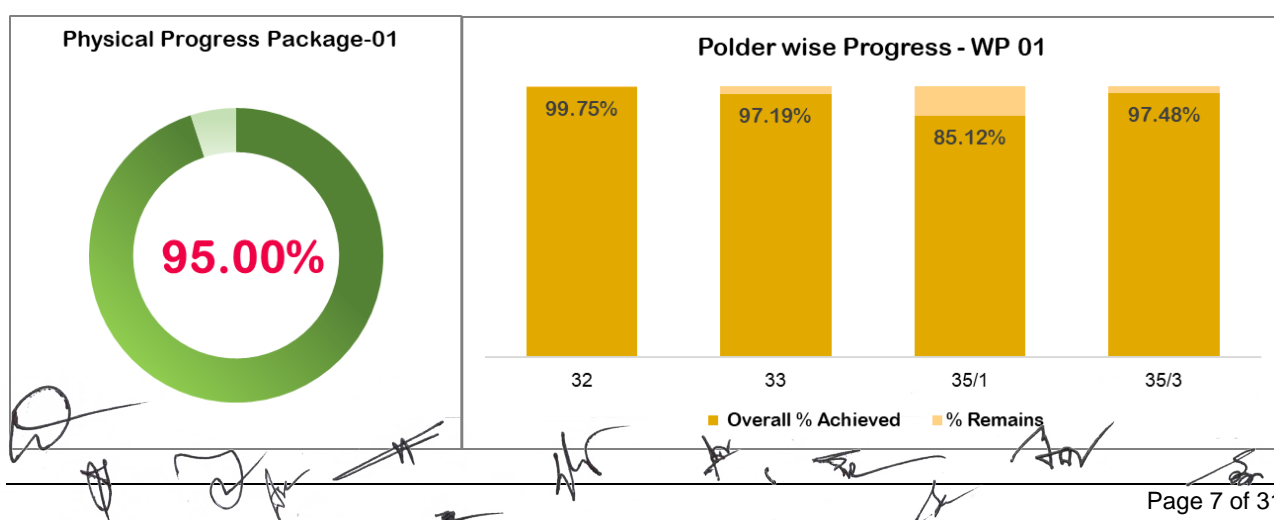
Description of Item	Unit	Target	Completed	Ongoing	Progress
Construction/ Re-sectioning of Embankment	Km	412.19	249.382	57.072	65.87%
Excavation/ Re-excavation of Drainage Channel	Km	305.85	215.607	29.993	70.72%
Construction of Drainage Sluices	No	89	57	28	78.63%
Repairing of Drainage Sluices	No	8	2	2	60.27%
Construction of flushing Inlets	No	81	41	20	72.55%
Repairing of Flushing Inlets	No	45	15	21	66.56%
Embankment Slope Protection Work	Km	29.330	19.816	6.504	78.55%
River Bank Protection Work	Km	14.141	8.904	0.500	90.89%
Construction of Closure Dam	No	9	1	2	56.25%

Overall Physical Progress of Package-1 & 2: 70.00% (Up to December 31, 2021).

1.7.2 Physical Progress of Work Package W-01

Table 1-2: Physical Progress for Package-1

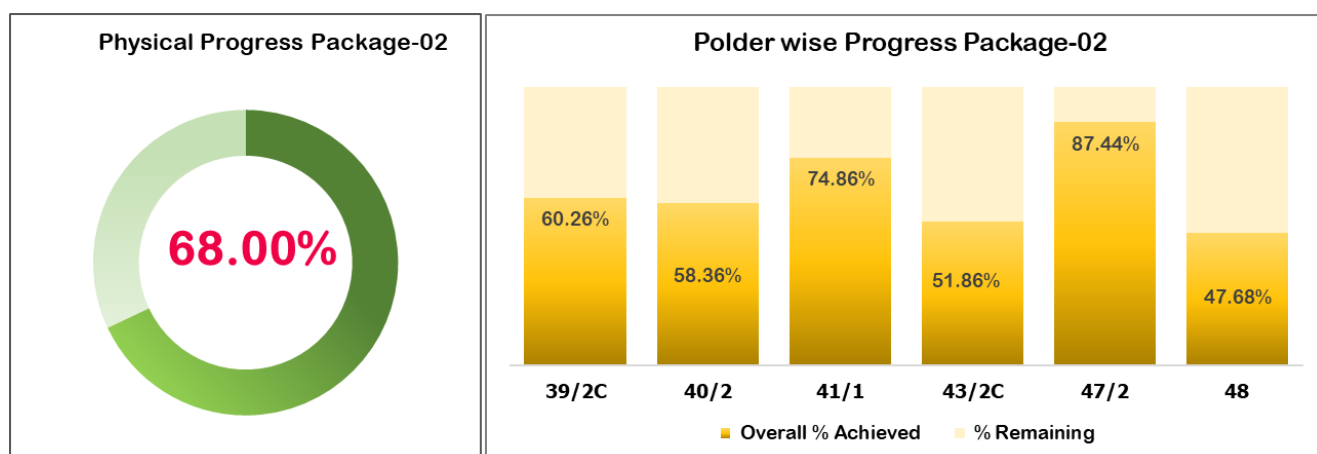
Description of Item	Unit	Target	Completed	Ongoing	Progress
Construction/ Re-sectioning of Embankment	Km	203.48	182.884	20.596	89.88%
Excavation/ Re-excavation of Drainage Channel	Km	151.21	136.95	14.261	90.57%
Construction of Drainage Sluices	No	38	38	0	100.00%
Repairing of Drainage Sluices	No	2	2	0	100.00%
Construction of flushing Inlets	No	29	29	0	100.00%
Repairing of Flushing Inlets	No	14	14	0	100.00%
Embankment Slope Protection Work	Km	19.97	17.966	2.004	89.96%
River Bank Protection Work	Km	4.25	4.25	0	100.00%
Construction of Closure Dam	No	1	1	-	100.00%



1.7.3 Physical Progress of Work Package W-02

Table 1-3: Physical Progress for Package-2

Description of Item	Unit	Target	Completed	Ongoing	Progress
Construction/ Re-sectioning of Embankment	Km	208.71	66.498	36.476	45.86%
Excavation/ Re-excavation of Drainage Channel	Km	154.64	78.658	15.732	50.87%
Construction of Drainage Sluices	No	51	19	28	49.02%
Repairing of Drainage Sluices	No	6	0	2	20.53%
Construction of flushing Inlets	No	51	12	20	45.10%
Repairing of Flushing Inlets	No	30	1	21	38.12%
Embankment Slope Protection Work	Km	9.36	1.850	4.500	67.14%
River Bank Protection Work	Km	5.691	4.654	0.500	81.78%
Construction of Closure Dam	No	8	1	2	12.50%



1.7.4 Land Acquisition Status up to 31 Dec 2022

Land acquisition Status in Contract package W-01:

Khulna – requirement 64.88 ha; possession received 64.03 ha and 0.58 ha pending
Bagerhat – requirement 66.48 ha; possession received 66.48 ha.

Land acquisition Statuses in Contract package W-02:

Pirojpur- requirement 114.04 ha; possession received 101.07 ha and 12.97 ha pending.
Baguna- requirement 20.58 ha; Possession received 19.97 ha and 0.61 pending
Patuakhali- requirement 26.84 ha; Possession received 3.07 ha and 23.14 ha pending)
Jhalokathi- requirement 10.18 ha Possession received 10.18 ha.

Total Requirement 303.70 ha Possession received 265.70 ha Pending 38.00 ha.

(Handwritten signatures and marks)

1.7.5 Afforestation program:

Total program 700 ha, Completed: 400 hectare.

1.7.6 Consultancy Status:

Table 1-4: Name of Consultants Firm's

Name of the consultancy	Consultant Firm	Key information
Detail Design, Construction Supervision and Project Management Support	Royal Haskoning DHV, Netherland, Sub-Consultant: DevConsultants, Bangladesh.	COMMENCEMENT DATE: 15 January 2015 TIME OF COMPLETION: 30 June 2022 Responsibilities: Construction Supervision, Contract Management and Administration and Role as Engineer, Project management support, Prepare Detailed Design and Environment and Social Studies.
Long Term Monitoring, Research and Analysis of Bangladesh Coastal Zone (Sustainable Polders Adapted to Coastal Dynamics):	Joint Venture Partners: DHI & Deltares Sub consultant: IHE Delft. The Netherlands, University of Colorado, Boulder US Columbia University, US and IWM, Bangladesh	COMMENCEMENT DATE: 15 October 2018 TIME OF COMPLETION: 14 April 2021 Responsibilities: Development of input datasets for modeling the physical processes, Modeling of the long-term physical processes in the coastal zone, Finalization of approach for reconstruction of the polder at different coastal zones including their phasing and construction program, Finalization of approach for reconstruction of the polder at different coastal zones including their phasing and construction program. Overall Progress: 65%. (See table 1-5).
Third Party Monitoring and Evaluation of Overall Project Implementation Consultancy	Consultant: SHELADIA Associates Inc., USA, Sub-Consultant: BETS Bangladesh	COMMENCEMENT DATE: 01 November 2015 TIME OF COMPLETION: 30 June 2022 Responsibilities: Prepare Comprehensive M&E Framework and Strategy, Develop and Maintain a Comprehensive Web-Based PMIS, Monitor and Evaluate Project Implementation Progress And Establish Reporting System, Monitor and Evaluate Project Impacts and Performance.
Consultancy Services for Feasibility Studies and Preparation of Detailed Design for the Following Phase of CEIP (CEIP-II).	Consultant: JV of i) Northwest Hydraulic Consultants Ltd, Canada; ii) Inros Lackner SE, Germany; and iii) Royal HaskoningDHV, Netherlands BV. Netherlands in association with i) CEGIS, Bangladesh ii)DDC Ltd, Bangladesh iii) SPMC, Ltd, Bangladesh; and iv) KMC, Bangladesh as Sub-Consultant.	COMMENCEMENT DATE: 09 August 2021 TIME OF COMPLETION: 30 June 2022 (12 Months) Responsibilities: preparation of comprehensive coastal embankment improvement program and implementation of the following phases of CEIP that includes, Rehabilitation of 20 Nos. Polder of Coastal Area. Overall Progress: 15%. (Inception approved, Prioritization and screening report under review).

Overall Physical Progress of the Project is 66.00% (Up to December 31, 2021) and Financial Progress 58.19% (up to December, 2021).

Table 1-5: Progress of Key Components under LTM are shown below:

	Description of Item	Target (no. of deliverables)	Achievement upto 22.5.2022	
			Completed upto	Progress (%)
C-1	Inception	1	1	100
C-2	Literature Review and Lessons Learned	3	3	100
C-3	Field Measurements, Create Database and Develop Datasets for model input	9	7	80
C-4	Modelling Long-term Processes in the Coastal Zone	45	23	55
C-5	Polder Reconstruction Program	7	4	60
C-6	Design Parameters, Management & Monitoring	6	3	50
C-7	Investment Plan for Entire CEIP	3	0	0
C-8	Capacity Building	ongoing	-	-
C-9	Outreach	8	6	75
QPR	Quarterly Progress Reports	14	14	100

1.7.7 Year based allocation as per approved DPP and actual cost

Table 1-6: Approved DPP and Actual Cost

Fiscal Year	RDPP Allocation (Lac)	Actual Cost (Lac)
2013-14	360.05	540.00
2014-15	2000.00	2000.00
2015-16	14991.67	15000.00
2016-17	22496.27	22500.00
2017-18	36750.59	37000.00
2018-19	60569.92	65000.00
2019-20	40634.67	55000.00
2020-21	92469.27	25000.00
2021-22	57727.56	32500.00
Total	328000.00	254540.00

1.8 Project Director related Information

Table 1-7: List of Project Director's

Name of Project Director	Designation	Duration
Md. Sarafat Hossain Khan	Addl. Chief Engineer, CEIP-1, BWDB, Dhaka.	19/05/2013 to 08/02/2016
Md. Delwar Hossain	Addl. Chief Engineer, CEIP-1, BWDB, Dhaka.	08/02/2016 to 29/01/2018
Md. Habibur Rahman	Chief Engineer, CEIP-1, BWDB, Dhaka.	29/01/2018 to 21/01/2020
Akhil Kumer Biswas	Addl. Chief Engineer, CEIP-1, BWDB, Dhaka.	21/01/2020 to 20/02/2020
Dr. Md. Mizanur Rahman	Chief Engineer, CEIP-1, BWDB, Dhaka.	20/02/2020 to 14/01/2021
Syed Hasan Imam	Addl. Chief Engineer, CEIP-1, BWDB, Dhaka.	14/01/2021- Till now

2. Chapter Two: Mid Term Assessment

2.1 Formation of committee

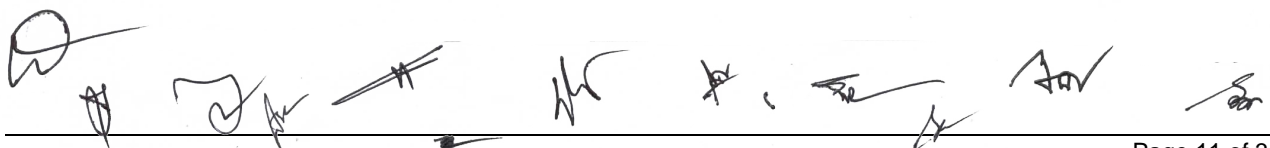
According to the RDPP of the project (1st revised), the Planning Commission has formed a 15-member Mid Term Evaluation Committee vide its Memorandum No. 20.358.014.01.05.502.13 / 133, dated: 26/12/2021 (Annex-2). The Chief Agriculture, Water Resources and Rural Institutions Division of Planning Commission has been included in the committee as an advisor.

Table 2-1: Member of the Committee

Sl. No.	Member of the Committee	Status of the Committee
1	Chief, Agriculture, Water Resources and Rural Institutions Division, Planning Commission	Advisor
2	Joint Chief (Irrigation Wing), Agriculture, Water Resources and Rural Institutions Division, Planning Commission	Convener
3	Joint Secretary (Planning), Ministry of Water Resources	Co- Convener
4	Joint Chief (Concerned), Agriculture, Water Resources and Rural Institutions Division, Planning Commission	Member
5	Representative from IMED	Member
6	Deputy Secretary, (concerned), Planning wing, Ministry of Water Resources	Member
7	Representative from Development wing, Ministry of Water Resources	Member
8	Representative from Chief Planning/ Chief Monitoring, BWDB	Member
9	Project Director, CEIP-1, BWDB	Member
10	Executive Engineer, PMU, CEIP-1, BWDB	Member
11	A representative of Bangladesh Water Development Board, Design Office	Member
12	A representative of Bangladesh Water Development Board, Project Evaluation Office	Member
13	Relevant branch officer of the Ministry of Water Resources	Member
14	Senior Assistant Chief-1 (forest), Forest, Fisheries and Livestock Division, Planning Commission	Member
15	Relevant Branch officer of Irrigation Wing, Agriculture, Water Resources and Rural Institution Division of Planning Commission	Member Secretary

2.2 The purposes of forming the committee are

- To monitor the overall progress of the actual work of the project in accordance with the RDPP (1st revised) of the project;
- To identify the advantages and disadvantages of the project and provide recommendations for timely completion of the project in consultation with the beneficiaries of the project,



2.3 Scope of the committee

- The committee will inspect the project area on site and verify the quantitative and qualitative progress of the physical work carried out under the project as per the approved DPP and prepare a report;
- The committee will discuss the ongoing problems of the project with the project officials and stakeholders and reflect their views and recommendations in the report;
- The committee will discuss with the beneficiaries about the objectives and outputs of the project and identify implementation challenges
- The committee will make necessary recommendations on other relevant matters, if any;
- The committee may co-opt members if necessary;

2.4 Evaluation method

The project is being implemented in 10 polders of Khulna, Bagerhat, Jalokathi, Patuakhali and Barguna and Pirojpur districts. Considering the size and location of the project area, the members of the committee were divided into the following two groups.

Table 2-2: Evaluation Method

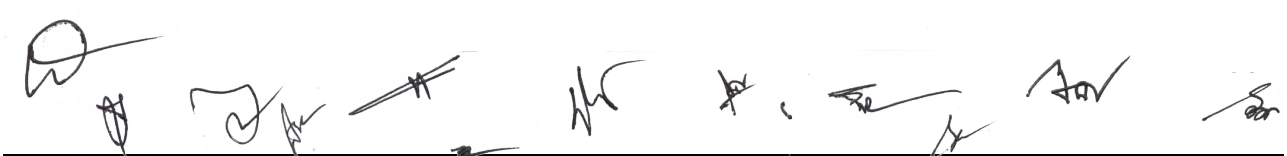
Group- 01		Group- 02	
1. Mohd. Enamul Haque Joint Chief (Irrigation), Agriculture, Water Resources and Rural Institutions Division, Planning Commission, Dhaka.	Barishal division (Patuakhali & Pirojpur)	1. S.M. Rezaul Mostofa Kamal Joint-Secretary, Ministry of Water Resources, Dhaka.	Khulna division (Khulna & Bagerhat)
2. Shibir Bichitra Barua Deputy Chief-2 (Irrigation), Agriculture, Water Resources and Rural Institutions Division, Planning Commission, Dhaka.		2. AHM Anawar Pasha Deputy Secretary (Dev-1), Ministry of Water Resources, Dhaka.	
3. Md. Sahadat Hossain Director, IMED, Planning Commission, Dhaka.		3. Dipanwita Saha Deputy Secretary (Plan-1), Ministry of Water Resources, Dhaka.	
4. Md. Sarwar Hossain Senior Assistant Chief (Irrigation), Agriculture, Water Resources and Rural Institutions Division, Planning Commission, Dhaka.		4. Tania Ferdous Senior Assistant Secretary (Plan- 1), Ministry of Water Resources, Dhaka.	
5. Syed Hasan Imam Project Director, PMU, CEIP-1, BWDB, Dhaka.		5. Noor- E-Helal Director, Project Evaluation Directorate, BWDB, Dhaka.	
6. Habibul Hasan Rumi Senior Assistant Chief, Forest, Fisheries and Livestock Wings, Planning Commission, Dhaka.		6. Ashutosh Barman Sub- Divisional Engineer, Office of the Chief Planning, BWDB, Dhaka.	
7. A. F. M. Towhid Zaman Executive Engineer, Design Circle-2, BWDB, Dhaka.		7. Mohammad Samiul Hoque, Executive Engineer, PMU, CEIP-1, BWDB, Dhaka.	

Members of Group-1 inspected various physical works such as River Bank Protection Work, rehabilitation of embankment, construction of sluice gates etc. on random basis under Polder 48 in Patuakhali district and 39/2C in Pirojpur district of Barisal division. While the members of Group-2 inspected the physical works under the Polder 33 in Khulna and 35/3 in Bagerhat district of Khulna division. During inspection, the project documents were reviewed and views of the local people and public representative were taken into account while discussions held with the local people and public representatives. The summary of the approach followed in the intermediate assessment is as follows:

- Review of project documents, project expenditure, procurement plan, year wise budget allocation, progress report, work already implemented and under implementation;
- Inspection of project area on random basis (at least two districts) and on-the-spot observation for appraisal of quality and quantity of work of physical work of the project.
- Preparation of intermediate evaluation report by analyzing project related documents, field level data and local public representatives, beneficiaries' opinions;
- The members of the committee met in a meeting to logically assess the impact of the project, finalize the evaluation report of the project and formulate recommendations for the future.

2.5 Limitations of evaluation

- Time limitation for assessing all polders
- Time and resource limitation in assessing visited polders.



3. Chapter Three: Project area inspection and data collection

For proper management and smooth Implementation of the works the 10 Polders of CEIP-1 have been split up into two Packages as mentioned below:

- Package-1: Polder- 32, 33, 35/1 and 35/3;
- Package-2: Polder-39/2C, 40/2, 41/1, 48, 47/2 and 43/2C;

3.1 Exchange of view with the officials concerned with the implementation of physical work at the field level

Grpop-1 members sat with project officials at Hotel Shikder, Kuakata and Group-2 members sat with project officials at Khulna CEIP-1 office. Drone video of all 10 polders was presented by PD, CEIP-1 to show ongoing progress. A documentary film on NGO CNRS activities was also presented to demonstrate the NGO activities.

3.2 Exchange of views with beneficiaries and public representatives

Table 3-1: Exchange of views with beneficiaries and public representatives

Group No	Date	Location of Public discussion	Issues discussed
Group-01	07. 01. 2022	DS-1(ch. 4+910 km) Polder: 35/3	<ol style="list-style-type: none"> 1. The team discussed with concerned WMA committee regarding operation of gates, what type of trainings they have received, whether received training is adequate or not etc. 2. WMA president informed that some members of WMG received training and they are capable to operate the gates. But they need more training on O&M for better performance.
		River bank protection works (ch. Km 36+220 to 36+370 km = 150m) Polder: 35/3	<ol style="list-style-type: none"> 1. The team discussed with the village people beside the River bank Protection Work and asked them how they are getting benefits for the completed works 2. The village people responded that they are getting benefits from CEIP-1 by three ways: <ol style="list-style-type: none"> a) Erosion has been protected. b) Saltwater intrusion has been stopped. c) Now they are safe during the cyclone and storm surges.
	08-01-2022	River bank protection works (ch. Km 0+000 to 0+200 km = 200m & Km 0+990 to 1+390 km = 400m) in Banishanta area Polder: 33	<ol style="list-style-type: none"> 1. The team discussed with the settlers beside the RBPW regarding quality of works and benefits. 2. The local community expressed their satisfaction regarding the completed work, but they demanded for more bank protection works. They received compensated money from CEIP-1 to relocate in safe place.

Group No	Date	Location of Public discussion	Issues discussed
Group-2	14-01-2022	Embankment construction work at Ch 36+300 km Polder: 48	<ol style="list-style-type: none"> 1. The team discussed with villagers regarding the benefit of newly constructed embankment. 2. Villagers informed that now they are safe and in past they lost lives and properties in several cyclones. They thanked Govt. for taking this project. 3. Local people requested to provide stair in C/S for public movement and team agreed with them.
	15-01-2022	Drainage Regulator DS-12 at Ch 54+050 km Polder 39/2C	<ol style="list-style-type: none"> 1. The team discussed with the WMA team regarding gate operation and training of WMG 2. WMA president informed that they received training on WMG management and gate operation. Hey, are now capable to operate the gates.

3.3 Work inspection and data collection in Khulna and Bagerhat districts

3.3.1 Monitoring of CEIP-1 interventions in Package W-01 (Khulna Division):

- Districts** : Khulna & Bagerhat
- Locations** : **Polder 33** under Khulna District & **Polder 35/3** under Bagerhat District
- Monitoring period** : January 7 to January 8, 2022
- Group** : **02 (all members along with Project Director attended)**

Interventions in the visited Polders (Polder 33 & 35/3)

The assigned Chinese (First Engineering Bureau of Henan Water Conservancy-HWE) contractor almost completed the all targeted interventions in Polder no. 33 & 35/3 commenced from January 26, 2016 to June, 2021. The completed interventions are as follows:

Table 3-2: Interventions in the visited Polders (Polder 33 & 35/3)

SI	Major interventions	Polder 33	Polder 35/3
1	Embankment constructions	49.322 Km	37.875 Km
2	River bank protection (RBP) work	2.000 Km	0.150 Km
3	Slope protection work	3.300 Km	0.700 Km
4	Constructions of structures (DS & FS)	18 Nos.	14 Nos.
5	Repairing of structures (DS & FS)	3 Nos.	2 Nos.
6	Drainage channel excavation	62.830 Km	-

The whole physical works were executed under the closely supervision of Royal Haskoning DHV (the Netherlands) in association with Dev Consultants Ltd., Develops Project Management, CEGIS, Institute of Water Modeling and DHI.

3.3.2 Site Observations (Day-1: January 7, 2022) in Polder 35/3

District: Bagerhat (Upazila: Bagerhat Sadar & Rampal)

Location: Polder 35/3

Visited sites:

- a) DS-1 (Ch. 4+910 km)
- b) Slope protection works (Ch. Km 38+580 to 39+280 km = 700m)
- c) River bank Protection works (Ch. Km 36+220 to 36+370 km = 150m)

Sample drawing and test reports are attached as Annex-3

Site specific Observations for different sites in Polder 35/3

a) DS-1, Location: Bashbaria

The teams visited the Drainage Sluice (DS-1) and found functioning. This is the biggest DS in Polder 35/3 and even in Package W-01. This is six-vent sluice. Old and broken sluices are carefully dismantled from upstream. All gates of sluice were found functioning.

Observations:

- I. The sluice is being operated by registered WMA through gate committee
- II. All types of sluice works such as structural works, loose apron and connecting khal excavations (**SHA-bakikhal**) are completed.
- III. WMA president, Freedom Fighter Mr. Abdus Salam Hawlader and other committee member expressed satisfaction for CEIP-1 works.
- IV. They also informed that they are involved for operating the structures and received the required training from recruited NGOs.

Then the committee members also monitored the embankment construction works adjacent of DS-1. The countryside slope of the embankment is not maintained at the ratio specified of 1:3 in some places of embankment. The committee also visited the afforestation activities and had a discussion with the representatives of DOF, Social Forest Division, Bagerhat. The committee observed over density of **Babla tress** and recommended to follow the right composition during future plantation. DOF representative responded that in saline area babla tree grows well and many planted trees died due to salinity problem.



b) Slope protection works, Location: Mollikerber Bazar

The team visited 700 m slope protection (**ch. Km 38+580 to 39+280 km**) works in this area. Slope protection works successfully protected the embankment and gradual siltation is being formed. The Environmental Specialists informed the team that they pay great attention to the Environment and try to create secured working environment. They also fulfill the requirements of Department of Environment (DoE) and receive renewal on Environment Clearance Certificate on regular basis. The Social team informed that about 293 numbers of PAP have been compensated as well as rehabilitated in Polder 35/3 through CEIP-1. The team wanted to know about the CC block testing provisions of CEIP-1. The CSE of DDCS&PMS consultant responded that most of the tests are being conducted in the self-laboratory established in BWDB campus of Noor Nagar, Khulna under CEIP-1.

Observations:

- I. The slope protection works found in good condition. The team expressed satisfactions for the CEIP-1 works in this site.
- II. The team advised to the DDCS&PMS Consultant to perform some CC block test as well as materials tests (sand, sands stone, cement etc.) from Khulna University of Engineering and Technology (KUET).



c) River Bank Protection (RBP) works, Location: Planner Bazar (Awliar Bazar)

The team visited 150 m River Bank Protection (**Ch. Km 36+220 to 36+370 km**) works in this area. The team expressed satisfaction for slope protection works which also facilitated stair for easy movement of villagers in this Bazar area. The local people also thanked the Govt. for this good work. In recent past, there was probability for severe erosion in this area, but due to implementation the River Bank Protection works, this area is now secured and the weekly Bazar (Hat) is sitting regularly.

Observations:

- I. Local people have demand for more khal excavation work, so that they can grow more crops using sweet water of excavated Khal.
- II. The local people demanded Regulator on Putimari Khal.

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Images 5-6: River bank protection (RBP) works

3.3.3 Site Observations (Day-2: January 8, 2022) in Polder 33

District: Khulna (Upazila: Dacope)

Location: Polder 33

Visited sites:

- a) DS-9 (Ch. 39+709 km)
- b) Slope protection works (Ch. Km 41+735 to 43+934 km = 2.199 Km)
- c) River Bank Protection works (Ch. Km 0+000 to 0+200 km = 200m & Km 0+990 to 1+390 km = 400m)
- d) Khal Excavation work (2.156 Km length)

Site specific Observations for different sites in Polder 33

a) DS-9, Location: Bajua

The teams visited the Drainage Sluice (DS-9) of Polder 33. This is a newly constructed four vent sluice. The team discussed with the community and WMA leaders. WMA president, Mr. Robert Halder informed the team that they are all capable to operate the gate. WMA and gate committees are involved for operating the structures and received the required training from recruited NGOs. The committee monitored the water flow process in sluice area. Then the committee members also visited the adjacent embankment as well as afforestation activities.

Observations:

- I. In the country side, the slope of the embankment (1:2) is properly maintained.
- II. In afforestation works, some plants are died. In some portion of embankment, afforestation is not completed.



Images 7-8: Site specific Observations DS-9

b) Slope protection works, Location: Khutakhali of Laodobe union

The teams visited 2.199 Km slope protection (**Km 41+735 to 43+934 km**) works in this area, adjacent to DS-11 (**ch. 41+723 km**). The team measured the embankment crest and slope ration but due to slope protections this was not possible to be checked accurately. The DDCS&PMS consultant informed the committee that the embankment is constructed as per design.

Observations:

- I. Afforestation work in embankment to be completed immediately.
- II. Slope protection works is found in good condition and has facilitated siltation in Country side.



Images 9-10: Slope protection works

Measurement of embankment works, Location: Banishanta

The teams moved for checking the embankment works. The team selected the site in Banishanta (just after Laudobe Bazar) and measured the embankment top level and side slope. The team found that the embankment top and side slope was done as per design.



Images 11-12: Measurement of embankment works

c) River bank protection (RBP) works, Location: Banishanta area

The teams visited the river bank protection works (**ch. Km 0+000 to 0+200 km = 200m & Km 0+990 to 1+390 km = 400m**) in Banishanta area. The area is now protected from river bank erosion. The local people expressed their satisfaction for the river bank protection work.

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Observations:

- I. The local community requested for more CC block works.
- II. The team observed that the RBP work is in good condition.



Images 13-14: River Bank Protection (RBP) works

d) Drainage Channel Excavation/ Re-excavation work (Bojan Khal)

After monitoring the RBP works, the team moved for monitoring the drainage channel excavation / re-excavation work. The name of visited khal is Bojan Khal, connected to DS-1 (ch. Km 3+483). The length of khal is 2.156 Km.

Observations:

- I. The convener advised the DDCS&PMS consultants to check the top of the khal, bed width while taking **Post work measurements** before final payment.
- II. The completed channel re-excavation work should be checked as per approved design before final payment.



Images 15-16: Khal Excavation work (Bojan Khal)

3.4 Work inspection and data collection in Patuakhali and Pirojpur districts

All Group -1 members along with Executive Engineer, PMU, CEIP-1 attended the visit.

3.4.1 Site Observations (Day-1: January 14, 2022) in Polder 48

District: Patuakhali (Upazila: Kalapara)

Location: Polder 48

Visited sites:

- a) Slope protection work with C/S 1:5 Slope (ch. 30+800 km to 32 + 015= 1215 m)
- b) Slope protection repair works (ch. Km 32+015 to 34+300 km = 2285m)
- c) Slope protection work with C/S 1:7 Slope (ch. Km 34+300 to 34+878 km = 500 m)
- d) Flushing Regulator FS-1 at Ch 36+ 500 km
- e) Embankment construction work at Ch 36+ 300 km

Sample drawings and test reports are attached as Annex-4

Site specific Observations for different sites in Polder 48

a) Slope protection works with C/S slope 1:5, Location: Ch 31 +100

The teams visited 1215 m slope protection (ch. 30+800 km to 32 + 015= 1,215 m) works (c/s slope 1:5) in this area. They physically visited at ch. 31+ 015. The Project Director introduced all level of Officers and Consultants (PMU, DDCS&PMS Consultant and Chinese contractors') to the Mid-term Team at that time. The Consultant briefed the construction procedure to the Mid-term Team. The Environmental Specialists ensured the team that they regularly tested noise and air quality and ensure safe working environment at site. The team wanted to know about the CC block tests provisions of CEIP-1, the representatives of DDCS & PMS consultant responded that all the tests are being conducted in CEIP-1 laboratory established in Polder 39/2C site office campus. Some tests of cement and rebar are done in KUET, Khulna.

Observations:

- I. Slope protection works successfully has protected the embankment and gradual siltation is being formed.
- II. The slope protection works found in good condition.



Images 17-18: Slope protection works

b) Slope protection repair works (Ch. Km 32+015 to 34+300 km = 2,285m)

The teams visited 2285 m slope protection repair works (Ch. Km 32+015 to 34+300 km = 2,285m) (c/s slope 1:5) in this area. They physically visited at Ch. 34+ 300. The work was on going and workers had taken proper safety measures. Previous Slope protection works was done by WAMIP Project. Some block of existing slope protection works is found in good condition and that will be reused. The Project Director informed that CEIP-1 committee count the blocks as and

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when required. Old and new blocks will be used in this repair work. The Consultant briefed the construction procedure to the Mid-term Team.



Images 19-20: Slope protection repair works

c) Slope protection work with C/S 1:7 Slope (ch. Km 34+300 to 34+878 km = 500 m)

The teams visited 500 m slope protection (ch. Km 34+300 to 34+878 km = 500 m) works (c/s slope 1:7) in this area. They physically visited at ch 34+ 315.

Observation:

- I. The slope protection works found in good condition.
- II. The team expressed their satisfaction regarding the slope and quality of the work



Images 21-22: Slope Protection Works at Km 34+300 to Km 34+878

d) Flushing Regulator FS-1 at Ch 36+ 500 km:

The teams visited the Flushing Sluice (FS-1) and found functioning. This is newly constructed sluice connected with adjacent khal. This is one-vent sluices.

Observation:

- i. Old and broken sluices are carefully dismantled from upstream
- ii. Gate of sluice was functioning
- iii. All types of sluice works such as structural works, loose apron and connecting khal excavations are completed.
- iv. Then the committee members also monitored the embankment construction works adjacent of FS-1 and instruct to maintain the slope as well as crest level of embankments.



Images 23-24: Flushing Regulator FS-1

e) Embankment construction work at Ch 36+ 300 km

The teams moved for checking the ongoing embankment construction works at chainage 36+300 km. The team found that embankment is being compacted with Bulldozer. Project director informed the committee that for ensuring 95% compaction of embankment Bulldozer, sheep foot roller and chain excavator is frequently used in our project.

Observation:

- i. Committee found river side slope as per design, but countryside slope not yet developed as per design. Consultant assured that it will be done as per drawing as work is now ongoing.



Images 25-26: Embankment construction (Compaction) work at Ch 36+ 300 km

3.4.2 Site Observations (Day-2: January 15, 2022) in Polder 39/2C

District: Pirojpur (Upazila: Vandaria)

Location: Polder 39/2C

Visited sites:

- a) River Bank Protection Work (ch. 52+900 km to 53 + 200= 2500 m)
- b) Closure Construction works (ch. Km 54+250)
- c) Drainage Regulator DS-12 at Ch 54+ 050 km
- d) Embankment construction work at same location

Site specific Observations for different sites in Polder 39/2C

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a) River Bank Protection Work (Ch. 51+500 km to 54 + 000= 2500 m)

The teams visited Rive Bank Protection Work at Chainage km. 53+500 to km 53+ 800. The Project Director informed the team that the dumping volume is 80 cum/m and dumping work was done by barge. The Consultant briefed the construction procedure to the Mid-term Team. The team wanted to know about the CC block tests provisions of CEIP-1, the representatives of DDCCS&PMS consultant responded that all the tests are being conducted in CEIP-1 laboratory established in Polder 39/2C site office campus. Some tests like cement, rebar is done in KUET, Khulna. Overall, the team expressed their satisfactions for the CEIP-1 works in this site.

Observation:

- i. Bank protection works successfully has protected the river
- ii. The Bank protection works found in good condition.



Images 27-28: River Bank Protection Work

b) Closure Construction works (ch. Km 53+950)

The team visited a closure construction work at ch km 53+ 950. The Consultant described the construction procedure of the work. Adjacent Canal is closed by this closure. In the river side slope protection work is provided and in the country side a berm is developed with goe bag protection. Project director informed that there are 7 more closures will be constructed.

Observation:

- I. The closure has successfully closed the river
- II. Works found in stable condition.



Images 29-30: Closure Construction works

c) Drainage Regulator DS-12 at Ch. 54+ 050 km

The teams visited the Drainage Sluice (DS-9) of Polder 39/2C. This is four vent sluice. The team had discussion with the community and WMA leaders. WMA president, Mr. Siddiquir Rahman informed the team that they are all capable to operate the gate. WMA and gate comities are involved for operating the structures and received the required training from recruited NGOs. The committee monitored the water flow process in sluice area.



Images 31-32: Drainage Regulator DS-12

Observation:

- I. The gate was found operate able
- II. Formed Gate committee operate the gates

d) Embankment construction work at same location

The committee visited embankment construction work at adjacent area. Workers had adequate safety measures at site. Bull dozer was compacting the earth. The committee asked how testing of soil and confirmation of compaction is done. Consultant informed that compaction is done layer by layer and test is done at every layer as per specification and test is conducted in CEIP-1 laboratory.



Images 33-34: Embankment construction work

Observation:

- I. Overall construction quality is good.
- II. Contractor need to work fast to complete the work in time.

4. Chapter Four: Theoretical analysis and assessment of project impact

4.1 Impact of the project based on feedback from beneficiaries

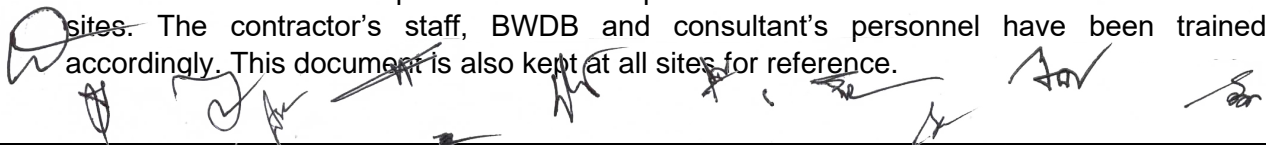
- Beneficiaries confirmed that saline water intrusion has been stopped in the project area
- Beneficiaries informed us that now they are cultivating 2 crops where as they cultivated single crop earlier.
- Water melon production opportunity created in Polder 33 and Polder 32 and local people has been benefited a lot by water melon cultivation.
- Public property has been saved and in the past they lost their lives and property due to cyclone.
- Irrigation facilities have been increased due to canal excavation and crop production has increased.

4.2 Socio-economic development

- Ensure safety of properties and lives of about 66012 ha of project area from cyclonic storm surges and salinity intrusion by rehabilitating and upgrading the coastal embankments (up to date achieved 43103 ha)
- Direct project beneficiaries from increased resilience to climate change (number) 724202 people (up to date achieved 429169 people).
- Cropping intensity will be increased from 133 % to 180%
- Road communication has been improved
- Integrated Pest Management (IPM) approach helps farmer to increase crop production at low cost
- Social afforestation and WMG involved women and hard core poor.

4.3 Capacity building against disaster risk

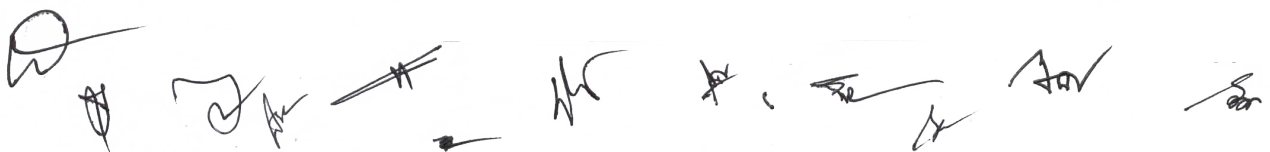
- For capacity building of BWDB professionals' in house, institutional and abroad training program is included in RDPP and the training program is going on. So far 679 man day training completed out of targeted 1200 man day.
- Under the consultancy service titled "Long Term Monitoring, Research and Analysis of Bangladesh Coastal Zone" capacity development program such as on the job training and theoretical and practical training on survey, theoretical training on hydrological modeling, storm surge modeling, river morphology and climate change has been going on
- The Project has developed Environmental Action Plan (EAP) and Contractor's Environmental and Social Management Plan (C-ESMP). In these documents clear instructions have been provided for Disaster Management Mechanism like cyclone, earthquake, flood, outbreak of fire, accident etc. The contractor's staff and sites engineers and personnel are being trained as per emergency response plan of the said documents. The documents have been kept in all site offices for reference and guidance.
- Due to outbreak of COVID-19 all over the world another document has been prepared under audience of The World Bank named "COVID-19 OHS Protocols for Project Construction Sites". This document stipulates the action plan to combat with the COVID at construction sites. The contractor's staff, BWDB and consultant's personnel have been trained accordingly. This document is also kept at all sites for reference.



- The embankment constructed under CEIP-1 is designed considering climate change impact and 50 years return period of flood. So the polders are quite safe against disaster risks.
- Reduce response time against disaster due to improved road network on newly constructed embankment in the polders.

4.4 Environmental development

- Construction of Embankment and regulators created a Risk free livelihood and Saline free environment inside the polder area.
- This facilitated opportunities for robust agriculture, fisheries, afforestation and development of bio-diversity.
- Afforestation program contributing in carbon reduction in air.
- Water quality has been improved inside the polder area



5. Chapter Five: Committee observation

5.1 Based on the opinion by the local people

- Country side slope of embankment need stair for public movement
- River side slope of River Bank Protection work need stair for public movement

5.2 General observation of the committee

- Overall quality of work is good. Team found embankment construction/ re-sectioning work, slope protection work, river bank protection work, drainage channel re-excavation work, drainage sluice replace, flushing sluice replace and repairing work satisfactory.
- Afforestation needs more attention. In some portions of the embankment, trees are not visible.
- WMO need more practical and motivational training for operating the gates.

5.3 Special observation of the committee

- Earth work measurement and Canal excavation measurement need to be rechecked.
- CC Blocks for every polder should be tested in BUET/ KUET apart from regular testing.
- Seedling for afforestation should be matured enough so that they can survive.
- Ensure the composition of forest species (Fruit, Woody and Medicinal plants) while planted on embankment slope.

5.3.1 Strong aspects of the project

- Projects considered climate change impact protection design in its interventions which fortify the safeguard against cyclones, storm surges and other calamities.
- Water Management Groups and Associations bear the responsibility of water management in the Polder area.
- Woman empowerment has been raised due to their active participation in WMG/WMA.
- Resettlement of project affected people has been established.

5.3.2 Weak aspects of the project

- Land acquisition is one of the prime factors that delayed the implementation time of CEIP-1. Due to lack of coordination among the implementing and executing agencies of Government (Land Ministry, BWDB Land Directorate, Project Office and BWDB Field Office etc.) the approval process and implementation of land acquisition took excessive time.
- Land price has increased as the implementation time differed from schedule time.
- Lack of revenue manpower in field office as BWDB is at present running shortage of manpower.

5.3.3 Project opportunities

Opportunities of the projects may be derived in the following sectors

- i) Agriculture
- ii) Fisheries
- iii) Extended Shrimp culture
- iv) Afforestation
- v) Mangrove forest
- vi) Conservation of threatened Bio-diversity
- vii) Tourism

5.3.4 Project risk

Risks of the project are as follows

- i) Very little chance of noise , air and water pollution in CC Block manufacturing plant
- ii) Navigation route is closed which is hampering boat passing and fish movement

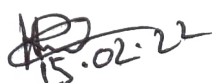
5.3.5 Project time extension:

Due to Covid 19 pandemic and recent cyclones, the project progress was hampered severely. As per field work situation the project need time extension for successful completion. RDPP need 2nd revision accordingly.



6. Chapter Six: Recommendations of the Committee

- 1) In some portion of embankment plants are died and need more care. Complete afforestation program in time.
- 2) A regulator can be placed on Putimari Khal according to the demand of local people.
- 3) Team recommend to complete remaining work as soon as possible.
- 4) During visit team also visit social, environmental activities and discussed WMG and local people. Team recommended keeping good functioning of the drainage sluice and flushing sluice gate.
- 5) Team recommended embankment construction/ re-sectioning work will be re-checked before final payment as well as drainage channel re-excavation work.
- 6) Team recommend to make staircase in slope protection work, riverbank protection work and ramp / staircase in country side of embankment for local people movement facilities.
- 7) Team recommended ensure the composition of forest species (Fruit, Woody, and Medicine plants) while planted on embankment slope.
- 8) Team recommended to sustain the polder and WMG/ WMA, local people participant is necessary.
- 9) Due to COVID-19 pandemic and recent cyclones, the project progress was hampered severely. As per field work situation the project needs time extension up to 31 December 2023 for successful completion. The RDPP need 2nd revision accordingly.



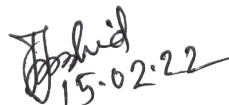
15.02.22

Habibul Hasan Rume
Senior Assistant Chief,
Forest, Fisheries and
Livestock Wings,
Planning Commission,
Dhaka
&
Member



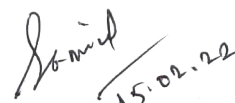
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Tania Ferdous
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Ministry of Water
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&
Member



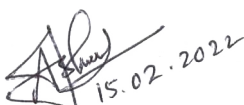
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A. F. M. Tawhid Jaman
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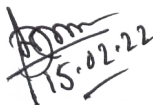
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Mohammad Samiul Hoque,
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&
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15.02.2022

Ashutosh Barman
Sub-divisional
Engineer, Chief
Planning, BWDB,
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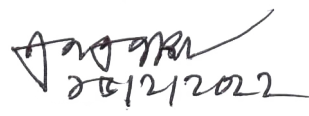


15.02.22

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&
Member Secretary

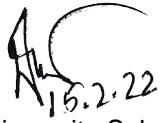


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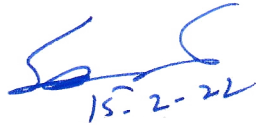


20/2/2022

AHM Anawar Pasha
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Ministry of Water Resources,
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&
Member



Dipanwita Saha
Deputy Secretary
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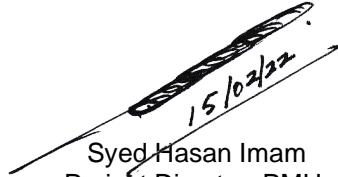
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