



Government of the People's Republic of Bangladesh
Bangladesh Water Development Board (BWDB)

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



**Consultancy Services for Feasibility Studies and
Preparation of Detailed Design for the Following Phase (CEIP-2)**

**Progress Report No. 2
September 2021**



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1. General

1.1 Introduction

A Consultancy Contract was signed on 19th July 2021 between the Bangladesh Water Development Board (BWDB) and the Consultant to provide Consultancy Services for Feasibility Studies and Detailed Design for the next Phase of the Coastal Embankment Improvement Project. The Consultant is represented by the Joint Venture (JV), being Royal HaskoningDHV (RHDHV) lead firm from The Netherlands, Northwest Hydraulic Consultants (NHC) from Canada and Inros Lackner (INROS) from Germany. The JV will implement the Consultancy Services in association with Bangladesh sub-consultants Development Design Consultants (DDC), Strategic Planning and Management Consultants (SPMCS), Knowledge Management Consultants (KMC) and Center for Environmental and Geographic Information Services (CEGIS).

As per the Terms of Reference the main objective of the Consultancy Services is to support BWDB in preparation of comprehensive coastal embankment improvement program and implementation of the following phases of CEIP.

Following CEIP-1, the next phase of CEIP is intended to improve certain polders of the remaining 122 polders and to that end a selection will have to be made of a next batch of 13 polders. These 13 polders will be combined with the 7 polders from the envisaged Package 3, and an optimal investment option will be selected. From this investment plan the first batch of polders will be taken forward for the preparation of tender documents for the next phase of CEIP.

The Consultancy Services comprise the preparation of a Feasibility Study according to the international standards, which will form the basis for project appraisal by the World Bank and the Government of Bangladesh (GoB) and will also cover the preparation of detailed designs and bidding documents of a batch of works to be implemented under the next phase of CEIP. Preparation of feasibility studies for the 13 selected polders as identified in the investment plan and tender documents for the first batch of polders as identified in the investment plan to be implemented under the next phase of the project.

This Monthly Progress Report (MPR) is over the month of September 2021 and will provide information and details on the activities and progress of this month.

1.2 Key challenges, risks and recommendations

1.1.1 Key challenges and risks

In the month of September 2021 COVID-19 measures were still in place in Bangladesh hampering travels and having physical meetings. Despite these measures Consultants, have been able to commence their activities and conduct field visits.

1.1.2 Recommendations

In this Progress Report, no specific recommendations are made.

1.3 Contractual Tasks of Consultants as per Terms of Reference

The main tasks of the Consultancy Services as per Terms of Reference are listed in Table 1-1.

Table 1-1: Contractual Tasks of Consultants

Task 1: Prioritization to select the next batch of polders for CEIP	
Task 1.1	Prioritization of 122 polders and selection of 23 polders for detailed prioritization
Task 1.2	Detailed prioritization of 23 polders and selection of 13 polders for Feasibility Study
Task 1.3	Selection of an optimal investment option
Task 2: Preparation of Feasibility Studies for the 20 polders (including updating/reviewing 7 Polders of Package-1 of CEIP-1) selected in Task 1	
Task 2.1:	Preparation of feasibility level designs
Task 2.2	Project benefits and economic analysis
Task 2.3:	Social assessment and beneficiary participation aspects
Task 2.4	Environmental and Social Management Framework (ESMF)
Task 2.5	Update framework for Monitoring and Evaluation
Task 2.6	Assessment of International Waterway aspects
Task 3: Preparation of Detailed Design and Bidding Documents, ESIA's and LAP/RAP	
Task 3.1	Detailed Designs and Bidding Documents
Task 3.2	Environmental and Social Impact Assessments (ESIAs)
Task 3.3	Resettlement Action Plan (RAP)
Task 3.4	Preparation of Land Acquisition (LA) Plans and LA Proposals
Task 3.5	Project Implementation Plan and Procurement Packaging
Task 3.6.	Operation and Maintenance (O&M)

2. Summary of Key Achievements during the reporting month

A summary of Key Achievements during the reporting month is listed in Table 2-1.

Table 2-1: Key Achievements during this reporting month

No.	Item	Key Achievements during this reporting month
1	Inception Report	<ul style="list-style-type: none"> Preparation of Inception Report Submission of Inception Report on 11th September 2021
2	Consultations	<ul style="list-style-type: none"> Conduct field visits Consultations with Officials in the field and people from coastal communities

3. Progress of Tasks

3.1 Introduction

The progress of each of the Tasks is described in this chapter together with possible challenges and risk and recommendations for improvements if any. The Tasks of the Terms of Reference (ToR) are guiding in this respect.

3.2 Various tasks

3.2.1 Request for assistance of the Project Director and administration

Consultants have kindly requested the Project Director for assistance in amongst others data collection, obtaining introduction letters and facilitating visa arrangements. Specifically, the need for data of the Long-Term Monitoring Research Project under CEIP-1 is mentioned here.

Furthermore, arrangements were initiated needed for advance payments and other contractual obligations like insurances and confirmation of availability of staff.

3.2.2 Participate in World Bank Mission September 2021

A (virtual) World Bank Mission was held in the period 5th to 27th September 2021 and met virtually with Representatives of the Government of Bangladesh (GoB) to jointly carry out an Implementation Support Review (ISR) for the Coastal Embankment Improvement Project Phase-1. Since the current preparation of the Feasibility Studies and Detailed Design is part of CEIP-1, the progress of this assignment was also monitored. To this end, a virtual meeting was held on 8th September 2021 in which Consultant presented their initial findings and reported on progress made so far.

3.2.3 Preparation and submission of Inception Report

The Inception Report was finalised and submitted on 11th September 2021. Together with the Inception Report, a chapter on "polder pre-screening of 23 polders" has been prepared, where the process of pre-selection of 23 polders out of the 122 remaining polders has been elaborated as well as the groundwork has been set in order to address as much as possible in relation to the Polder Screening Report given the limited availability of the data within the first month of the project.

During the Inception Phase, taking in to account the COVID-19 pandemic situation and restrictions on movement, experienced experts from the Consultant's Team continued visiting several polders in the field, in order to gain a good understanding on the current condition of the polders and to already identify locations which experience threats from coastal hazards.

The requested data of the Long Term Monitoring Studies under CEIP-1 were made available on 9th September 2021 which allow Consultants to effectively make use of their findings to the benefits of the current assignment. The data of the Long-Term Monitoring Studies are not used as yet in the preparation of the Inception Report submitted on 11th September 2021.

3.2.4 Review of relevant projects

The Consultant has collected data and information in relation to relevant projects such as the Coastal Embankment Improvement Project Phase-1 (CEIP-1), the Blue Gold Programme, Emergency Cyclone Recovery and Restoration Project (ECCRP), Bangladesh Delta Plan 2100 (BDP2100)¹ and other documents; for an overview, reference is made to the Inception Report prepared under the current studies. Review of this data has made it possible to derive lessons learned which are already incorporated in the study. At the same time data and information in relation to the polders, design procedures and other relevant aspects have been derived. In addition, the Consultant has reviewed and analysed the World Bank Technical Assistances: 1) Coastal Resilience: Developing New and Innovative Approaches in India and Bangladesh along the Bay of Bengal, Component 1: Improving empirical evidence and analytical support to future investments; 2) Developing Concept Design Solutions for Coastal Erosion In Bangladesh, and 3) Analytical Study on the Role of a Probabilistic Approach in Polder and Embankment Design in Bangladesh. It is worth mentioning that the Long-Term Monitoring (LTM), Research and Analysis of Bangladesh Coastal Zone (Sustainable Polders Adapted to Coastal Dynamics), provides valuable information, data and insights for the next phase of CEIP.

3.2.5 Replying to comments on the Draft Inception Report

Within the month of September 2021, Consultants received a first batch of comments from the World Bank (26th September 2021). Consultants replied to the comments via the World Bank Project Tracker in October 2021 (see next Report).

3.3 Task 1: Prioritization to select the next batch of polders for CEIP

3.3.1 Task 1.1: Prioritization of 122 polders and selection of 23 polders for detailed prioritization

The first stage of this Task included the pre-screening of 122 polders and narrowing to 23 polders by means of a high-level assessment, whereas the second stage entails detailed prioritization of 13 polders out of the 23 polders. The first activities in connection to Task 1.1 were continued in the month of September 2021, using as a basis the groundwork and approach that has been delineated in the Inception Phase.

3.3.2 Task 1.2: Detailed prioritization of 23 polders and selection of 13 polders for Feasibility Study

The first activities in connection to the detailed prioritization of 23 polders and selection of 13 polders for Feasibility Study were commenced and included:

1. Secondary data collection;
2. Consultations;
3. Assessment of data collected;

¹ The Bangladesh Delta Plan (BDP) 2100, Government of Bangladesh, 2018

4. Development of MCA tools and software.

Important in this month was to obtain proper weighting criteria to be used in the downstream MCA.

Throughout preparation of the Polder Screening Report and Prioritisation Report, a list of officials from BWDB were contacted for polder data collection which provided very significant insights to the Consultant. The information collected is mostly in relation to:

- General information on polders;
- Vulnerabilities of polders;
- Condition of polder infrastructure and structures;
- Collection of polder index maps.

Initially proposed interventions were established, and several interventions were assessed as per their suitability in each polder and their possible locations will be identified. It is to be noted, that this section includes a high-level assessment and will be further detailed and updated in the next stage of CEIP, after the engineering surveys have been implemented and the numerical modelling work has been completed.

Although the submission of the Polder Screening Report (including Preliminary List of screening of 23 Polders) and Prioritization Report (including Prioritization List of 13 Polders with detailed Report updating MCA of 2013 and the Strategic Plan report on selection of an optimal investment option including 20 Polders (including CEIP-1 Polders) were due for submission, it was advised to await submission, as per Consultancy Contract in month 2, until the Inception Report was approved.

3.3.3 Task 1.3: Selection of an optimal investment option

In this month no activities to report on this Task.

3.4 Task 2: Preparation of Feasibility Studies for the 20 polders (including updating/reviewing 7 polders of Package-3 of CEIP-1) selected in Task 1

3.4.1 Task 2.1: Preparation of feasibility level designs

One of the requirements of the Ministry of Water Resources is to present innovative designs and Consultants and in preparation of the feasibility level designs, concepts were developed and presented to the Main Stakeholders. Criteria of the innovations should address the most vulnerable polders and improve lives of non-urban people, nature based solutions (see Figure 3.1), use as much as possible Government land, promote dredging where materials are not sufficiently available, beautification and people friendly structures and consider water management within a polder and plan accordingly.

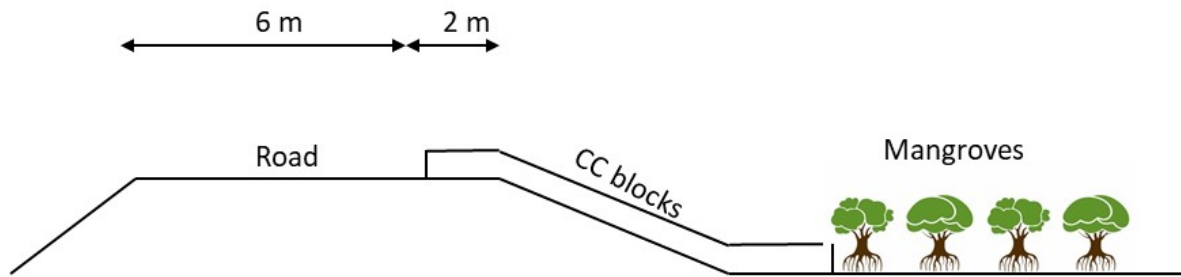


Figure 3.1: Hybrid embankment with nature based solution approach

Maps to facilitate the design process were also prepared (see an example in Figure 3.2).

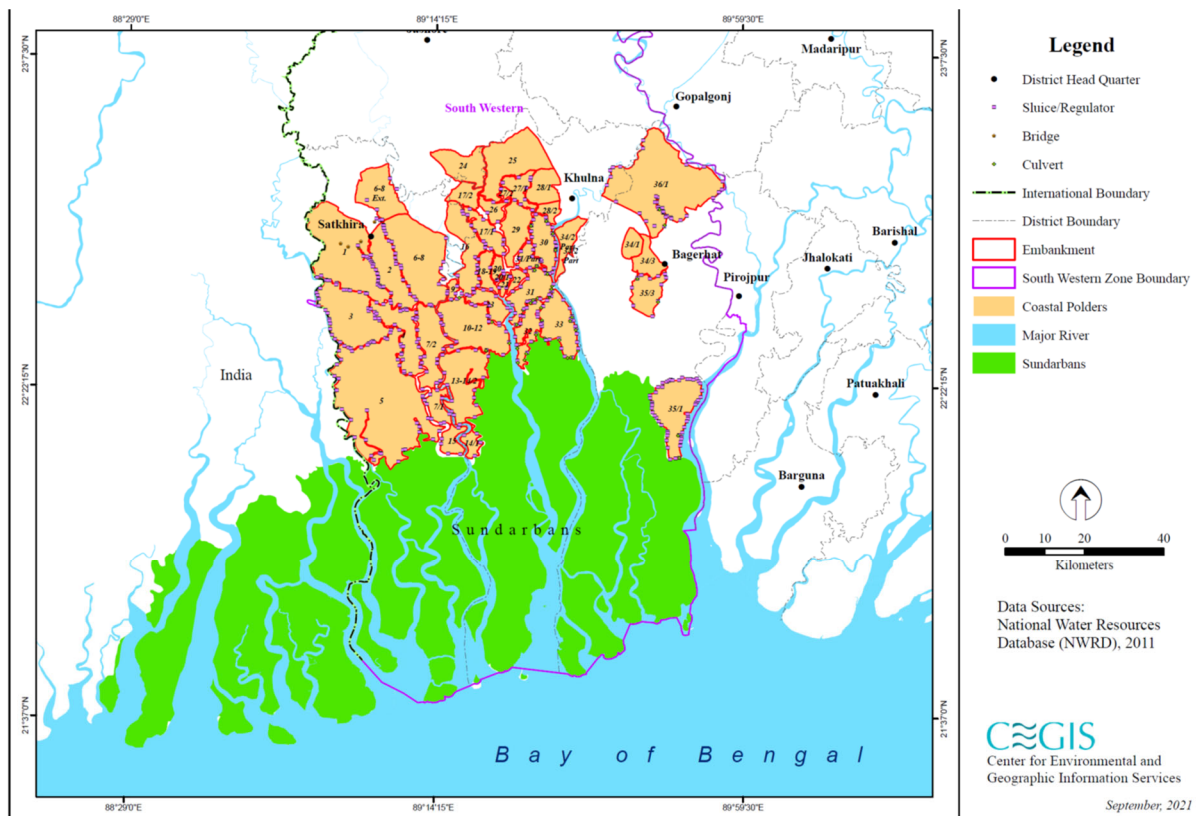


Figure 3.2: Maps prepared to facilitate the design process

In this month also meetings were held with the Chief Engineer Design of the BWDC to share Consultants approach and requirements needed from the various Design Circles. Thereafter, various consultations were held between the various Design Circles and Consultant’s Design Team and data and reports were collected.

3.4.2 Task 2.2: Project benefits and economic analysis

Secondary data on economics and benefits were collected and economic criteria were developed for the MCA where it concerns economics.

3.4.3 Task 2.3: Social assessment and beneficiary participation aspects

Preparations were made for the consultations to be conducted in the field.

3.4.4 Task 2.4: Environmental and Social Management Framework (ESMF)

In this reporting month no activities to report on this Task.

3.4.5 Task 2.5: Update framework for Monitoring and Evaluation

In this reporting month no activities to report on this Task.

3.4.6 Task 2.6: Assessment of International Waterway aspects

Reports and masterplans concerning waterways were collected with specific focus on international connections; the Jamuna River corridor which transboundary connections with India was reviewed and the impact on the coastal zone. The latter holds for developments for Payra, Chattogram and Mongla Ports.

3.5 Task 3: Preparation of Detailed Design and Bidding Documents EIA's and LAP/RAP

3.5.1 Task 3.1 Detailed Designs and Bidding Documents

Bangladesh Water Development Design Standards and Approaches were reviewed. Based on these Standards and Approaches, Consultant started preparing a Basis of Design Document which will be used as guidance for the preparation of the detailed designs and has also already been used in this Prioritisation Report for the preparation of the typical concept designs.

3.5.2 Task 3.2 Environmental Impact Assessments (EIAs)

In this reporting month no activities to report on this Task.

3.5.3 Task 3.3 Resettlement Action Plan (RAP)

In this reporting month no activities to report on this Task.

3.5.4 Task 3.4 Preparation of Land Acquisition (LA) Plans and LA Proposals

In this month no activities to report on this Task.

3.5.5 Task 3.5 Project Implementation Plan and Procurement Packaging

In this month no activities to report on this Task.

3.5.6 Task 3.6. Operation and Maintenance (O&M)

In this month no activities to report on this Task.

4. Summary of Staff Inputs

A summary of inputs of Consultant's Staff in each of the Tasks are summarised in Table 4-1.

Table 4-1: Inputs of Consultant's Staff in each of the Tasks this month

Task	Inputs of Consultant's Staff in each of the Tasks this month**)																			
	Task 0: Inception Phase	Task 1: Prioritization to select the next batch of polders for CEIP	Task 1.1: Prioritization of 122 polders and selection of 23 polders for detailed provision.	Task 1.2: Detailed prioritization of 23 polders and selection of 13 polders for feasibility study.	Task 1.3: Selection of an optimal investment option.	Task 2: Preparation of feasibility studies for the 20 polders (including updating/reviewing 7 Polders of Package 1 of CEIP-1 selected in Task 1)	Task 2.1: Preparation of feasibility level designs	Task 2.2: Project benefits and economic analysis	Task 2.3: Social assessment and beneficiary participation aspects	Task 2.4: Environmental and Social Management Framework (ESMF)	Task 2.5: Update framework for Monitoring and Evaluation	Task 2.6: Assessment of International Waterway aspects	Task 3: Preparation of Detailed Design and Bidding Documents, EIA/ESIA and LAY/Plan	Task 3.1: Detailed Designs and Bidding Documents	Task 3.2: Environmental and Social Impact Assessment (ESIA)	Task 3.3: Resettlement Action Plan (RAP)	Task 3.4: Preparation of Land Acquisition (LA) Plans and LA Proposals	Task 3.5: Project Implementation Plan and Procurement Packaging	Task 3.6: Operation and Maintenance (O&M)	
International Staff																				
Team Leader *)																				
Hydraulic Structural Engineer *)																				
Geotechnical Engineer *)																				
Coastal Zone Management Specialist																				
Social Scientist / Sociologist / Resettlement																				
MIS Specialist *)																				
Economist																				
Project Coordinator *)																				
Survey Coordinator *)																				
River Modeller *)																				
Project Director *)																				
Additional Coastal Engineer *)																				
Additional River and Coastal Dynamics Expert *)																				
Additional Civil Engineer *)																				
National Staff																				
Deputy Team Leader																				
Cyclone and Storm Surge Modelling Specialist																				
Coastal and Estuarine Morphologist																				
Senior Hydraulic Engineer - 1																				
Senior Hydraulic Engineer - 2																				
River Engineer																				
Resettlement and Indigenous Peoples Specialist																				
Environmental Specialist																				
Design Engineer - 1																				
Design Engineer - 2																				
Design Engineer - 3																				
Geo-technical Engineer																				
GIS/Remote Sensing Specialist																				
Procurement / Contract Management Specialist																				
Agricultural / Irrigation Specialist																				
Economist																				
Survey Engineer / Quantity Surveyor - 1																				
Survey Engineer / Quantity Surveyor - 2																				
Survey Engineer / Quantity Surveyor - 3																				
Land Acquisition Specialist - 1																				
AutoCAD Specialist - 1																				
AutoCAD Specialist - 2																				
Ecologist																				
Forestry Specialist																				
Fishery Specialist																				

Notes
 *) Bangladesh inputs
 **) Consultants' Staff input to this Task = []