



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

BANGLADESH WATER DEVELOPMENT BOARD  
**COASTAL EMBANKMENT IMPROVEMENT PROJECT PHASE-I, (CEIP-I)**

Financed by World Bank with  
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**Fourth Annual Environmental Audit Report**  
**for 01 January – 31 December 2019**

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in association with BETS Consulting Services, Ltd.  
Third Party M&E Consultants for Overall Project Implementation  
(CONTRACT PACKAGE NO. CEIP-1/ C2/S3)



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## Acronyms

BWDB	Bangladesh Water Development Board
CC	Concrete Cement
CEGIS	Center for Environmental and Geographical Information Services
CEIP-1	Coastal Embankment Improvement Project Phase-1
C-ESMP	Contractor Environmental and Social Management Plan
CHWE	First Engineering Bureau of Henan Water Conservancy
CICO	Chongqing International Construction Corporation
CRTS	Consultancy for Research and Testing Services
CSE	Construction Supervision Engineer
DDCS & PMSC	Detailed Design and Construction Supervision and Project Management Support Consultant
DPM	Deputy Project Manager
DRE	Deputy Resident Engineer
DS	Drainage Sluice
DTL	Deputy Team Leader
EHS	Environmental Health and Safety
EMP	Environmental Mitigation Plan
ES	Environmental Specialist
ESMF	Environmental and Social Management Framework
FGD	Focus Group Discussion
FS	Flushing Sluice
GoB	Government of Bangladesh
GPS	Global Positioning System
HHs	Households
ICM	Integrated Crop Management
IPM	Integrated Pest Management
IPOE	Independent Panel of Experts
JD	Job Description
KUET	Khulna University of Engineering and Technology
LTMRA	Long Term Monitoring, Research and Analysis
M&E	Monitoring and Evaluation
MTR	Mid-Term Review
NCR	Non-Compliance Register
NGO	Nongovernmental Organization
PM	Project Manager
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
QC	Quality Control
R/S	River Side
RE	Resident Engineer
SECU	Social, Environmental and Communications Unit
SES	Senior Environmental Specialist
ToR	Terms of Reference
WB	World Bank
WQAP	Water Quality Assurance Plan
XEN	Executive Engineer

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# 1. Introduction

## 1.1. Background

The Coastal Embankment Improvement Project, Phase 1 (CEIP-1) is a 7-year \$400 million project being implemented by the Bangladesh Water Development Board in partnership with the World Bank and the Pilot Programme for Climate Resilience of the Climate Investment Fund. The Project started in 2013 and will close in 2020. It covers 17 polders in three Packages of 4, 6 and 7 polders respectively. The Detailed Design and Construction Supervision Consultants (DDCS&PMSC) commenced their design work for the first of three Packages in January 2015 and the Package 01 Contractor commenced their works contract on 26 January 2016. The Package 02 Contractor's contract was signed on March 2017 and work was commenced on 12 July 2017. Moreover, contract signing between Bangladesh Water Development Board (BWDB) and the Non-Governmental Organizations (NGOs) for the consultancy services of social mobilization, afforestation and Integrated Pest Management Plan (IPM) was started from 24 February 2019 and CEIP-1 accomplished contract signing of five NGOs by 02 May 2019, and the NGOs have been providing their services. Contract between BWDB and the Consultants for Long Term Monitoring, Research and Analysis (LTMRA) of Bangladesh coastal zone was signed on 04 October 2018 which was effective from 15 October 2018 and the Inception Report was due on 15 January 2019. The Third Party M&E Consultants joined the project on 01 November 2015. After working with CEIP-1 for about one year, the Third Party M&E Consultants carried out the first Annual Environmental Audit during 01 January- 06 February 2017 covering the reporting period January through December 2016 and second Annual Environmental Audit covering January- December 2017 was carried out during 10 January- 07 February 2018. The Third Annual Environmental Audit covering January- December 2018 was carried out during 06 January- 07 February 2019. Finally, the Third Party M&E Consultants have carried out this fourth Annual Environmental Audit covering the period January- December 2019 from 05 January to 06 February 2020.

Institutional arrangements of CEIP-1 for safeguarding the environment include:

1. Project Management Unit, with its Social and Environmental Coordination Unit, who are responsible for oversight and guidance on environmental matters as well as coordination with GoB agencies. PMU also reports to BWDB, the Project Steering Committee (PSC) and the World Bank.
2. DDCS&PMS Consultants who are responsible for developing the EIAs and EMPs consistent with World Bank and GoB guidelines and ensuring the EMPs are implemented satisfactorily. These Consultants review and approve the Contractor's EAPs and monitor their implementation on an ongoing basis. The DDCS&PMS Consultants develop the bidding documents and make sure that the Contract and its specifications include the necessary clauses and elements governing environmental safeguards.
3. The Consultants for Long Term Monitoring, Research and Analysis (LTMRA) of Bangladesh coastal zone also need to consider the environmental safeguards and sustainability issues in their polder development plan, updated design and specifications and action plan for capacity building activities.
4. The Nongovernmental Organizations (NGOs) are responsible for the social mobilization works for the sustainable operation of the polders, social afforestation and Integrated Pest Management (IPM) interventions.

5. Civil Works Contractors who must develop and implement polder- and site-specific Environmental Action Plans in the case of Package 01 and Contractor Environmental and Social Management Plans known as C-ESMP in the case of Package 02.
6. World Bank reviews and provides comments and no objection to the various safeguard documents.
7. Community participation, consultation and feedback through the EIA process and Grievance Redress Mechanism.
8. Third Party M&E Consultants who perform environmental audits and monitor and evaluate the project overall. Specifically, with respect to environmental safeguards, the M&E Consultants review and comment on environmental documents prepared under CEIP-1, spot check compliance, report their findings and prepare recommendations. The M&E Consultants report to the PSC and their contract is administered by the Project Director.

Each polder has its own EIA which includes an EMP which is meant to ensure that the environmental and social management practices are integrated in the design, construction, operation and maintenance of the polder.

Among others, the specific objectives of the EIA are to:

- Comply with national regulatory and WB policy framework (further discussed later on in the document),
- Determine and describe the existing environmental and social setting of the Project Area (the project area defined as is defined as the entire area inside the polder, project influence area outside the polder i.e. the embankment, borrow pits and spoil disposal are if located outside the polder and access route to the polder),
- Identify and assess the potential environmental and social impacts of the project, including health and safety issues,
- Identify mitigation measures to minimize the negative impacts and enhancement measures to enhance the positive impacts, and
- Detail an Environmental Monitoring Plan which also defines mitigation measures.

As is the case for the EIAs and EMPs, each polder is also to have an Environmental Action Plan (EAP) for Package 1 and Contractor Environmental and Social Management Plan (C-ESMP) for Package 2 which is prepared by the Contractors. The EAP of Package 1 and C-ESMP of Package 2 are to operationalize the EMP for which the Contractor is responsible. These Plans detail in a site-specific manner the mitigation and environmental compliance requirements and provide a monitoring plan outlining the protocols, frequency of monitoring, person(s) responsible, etc.

## 1.2. Audit Objective

The overall objective of the fourth Annual Environmental Audit of CEIP-1 is to assess the extent to which the plans for safeguarding the environment are in place, are being implemented and are effective based on the institutional and contractual arrangements applicable to the Project.

## 1.3. Scope of the Audit

In summary, the audit examined: (1) the status of preparation of required safeguards documents; (2) whether the systems, tools and protocols are in place for environmental monitoring; (3) staff and funding resources; and (4) compliance with WB safeguards, including consultation, communication, grievance mechanisms and disclosure, and country legal framework.

The audit covered the Contractors for Package 01 and Package 02, NGOs, Consultants of Long-term Monitoring, Research and Analysis of Bangladesh Coastal Zone, the DDCS&PMS Consultants and Project Management Unit (BWDB- Social and Environmental Coordination Unit).

Fieldwork was centered on the polders of Package 01 and Package 02, but the audit examined CEIP-1 overall whenever appropriate. It is forward-looking to draw lessons and make recommendations on areas of improvement for Package 01 and 2 which also give guidance for broader application to Package 03, similar projects or a future phase of CEIP.

Specifically, the audit assessed:

- Status of EMP and EAP/C-ESMP implementation and any constraints to implementation
- Status of implementation of the recommendations/ findings of the third Annual Environmental Audit that was conducted by Third Party M&E Consultants
- Status of the implementation of the recommendations/ agreed actions of the World Bank (WB) environmental missions of May 2019 and October 2019
- Status of the implementation of the recommendations/ agreed actions of Bi-Annual Environmental Monitoring Report of July 2019
- Status of the implementation of the environmental safeguards measures for the social mobilization, afforestation and IPM activities of the NGOs
- Status of extent of the environmental safeguards and sustainability issues in the polder development plan, updated design and specifications and action plan for capacity building activities of the consultants of long-term monitoring, research and analysis of Bangladesh coastal zone
- Whether the project involves labor influx and the sufficiency of mitigating measures. The rapid migration to and settlement of workers and followers in the project area is called labor influx, and under certain conditions, it can affect project areas negatively in terms of public infrastructure, utilities, housing, sustainable resource management and social dynamics
- Extent to which the Environmental Monitoring Plans and environmental mitigation measures outlined in the EIAs are being followed and whether they are effective.

- Existence and quality of monitoring tools, formats and protocols
- Processes and procedures for compliance monitoring
- Degree to which qualified staff resources are in place
- Necessary environmental testing equipment is in place or hired when needed
- Staff awareness and training
- Identify constraints if any in ensuring compliance to the measures outlined in the EMP
- Review the GRM functioning in the polder areas and check and analyze the Grievances related to environmental safeguards in the polder areas
- Review the accident records in the work sites and examine the magnitude of the accidents and how those were addressed by the contractor
- Look forward to anticipating whether any of the CEIP-1 activities may have negative impact or not on the Sundarbans mangrove forest

The Environmental Audit presents findings and observations followed by a section on conclusions and recommendations aimed at improving the effective implementation of environmental safeguards.

## 1.4. Methodology

The M&E Consultants have undertaken a review of documents, reports, site records, test results, conducted interviews in offices and in the field, and made direct observations during a one-week period and then wrote up their findings. Specific work sites, which were visited on a given polder were selected randomly for the most part, but in all cases without advance notice to the Contractors and DDSC&PMSC and NGOs

Document Review: Existing base documents were reviewed such as the Environmental and Social Management Framework, EIAs, EMPs, Contractor EAPs and C-ESMPs, EHS Assessment report, guidelines, standard procedure manuals, contractor's contract of Package 01 and Package 02, contractors' Emergency preparedness plan, and World Bank Aide Memoires corresponding to the period covered by this audit were reviewed with respect to environmental aspects. The Twice-monthly Environmental inspection reports of both contractors, Monthly Progress Reports of DDSC&PMSC, and Bi-Annual Environmental Monitoring Reports were also reviewed.

Key Informant Interviews and FGDs: PMU, DDSC&PMSC environmental personnel, the Team Leader and Environmental Specialist of the consultants of LTMRA of Bangladesh coastal zone were interviewed at DDSC&PMSC's and consultants of long-term monitoring, research and analysis of Bangladesh coastal zone's Dhaka office, NGOs and Package 01 and Package 02 field offices. Contractors' and DDSCS &PMS Consultant's staff also were interviewed in audited polders of Package 01 and Package 02 during the period of January 05-09, 2019. FGDs were conducted with local communities and Water Management Groups (WMGs) in polder areas and workers in all visited

sites were also interviewed during the audit team’s field visits to gain an understanding of how well the project is implementing EMPs.

Site Records: Test results were reviewed. Non-compliance report (NCR) logs, NCR clearance records and procedures were examined in site offices and major construction work sites.

Direct observation: Level of compliance with the EMP/EAP/C-ESMP and practices of the Project and Contractor staff was observed in the field. Some of the embankment construction worksites and drainage/flushing sluice gate sites including completed drainage/ flushing sluice, CC block manufacturing plants, river protection, afforestation works were visited in different polders of Package 01 and Package 02 (details in Section 2.7.2) to examine field level application of the environmental safeguards on a sampling basis. The team also visited the campsites, site offices and main offices of both Contractors and DDCS&PMSC to discuss systems, strength of the environment staff and documents.

### 1.5. Team Composition and Duration

The audit was accomplished by the Environmental Team Environmental Specialist–National (A.K.M. Rezaul Haque Khan) of the Third Party M&E Consultants with the support of the Team Leader (Mr. Jan T. Twarowski), Deputy Team Leader (Mr. Md. Mahidur Rahman Khan) and Field Data Collector/ M&E Officer (Mr. Md. Safiqul Islam). The audit was conducted within a short timeline through fieldwork for five days in Package 01 and 02 polder areas and several days of meetings and document/file reviews in Dhaka, followed by a couple of weeks of report writing in Dhaka.

## 2. Audit Findings

This section summarizes the audit findings focusing on:

- existence of appropriate base documents;
- systems- tools, formats, institutional arrangements, protocols, quality assurance;
- environmental staff resources;
- staff awareness and training;
- environmental monitoring testing; and
- actual implementation/ practice level.

### 2.1. Existence and appropriateness of base documents

Existing base documents or reports were reviewed such as EIAs and EMPs, Contractor EAPs/ESMPs, Quality Assurance Plan, Contract/Bidding documents, Coastal Biodiversity chapter of LTMRA Consultants, and the training modules (IPM and ICM, WMOs, Afforestation) of NGO (Shushilan).

### 2.1.1. EIA and EMP

According to Environmental Conservation Rules (ECR) 1997 of DoE, the project is categorized as “Red”, requiring that EIA and RAP have to be submitted for obtaining an Environmental Clearance Certificate (ECC). The ECC was obtained and thus the Project has complied with the regulatory requirement. According to WB safeguard policy, the Project is classified as Category “A” involving significant environmental adverse impact. To satisfy compliance of GoB and WB, CEIP-1 has already prepared EIAs for each of the four polders of Package 01 and six polders of Package 02 and these contain polder-specific EMPs. These EIAs have been approved by WB and CEIP-1 and have spelled out the required actions needed to comply with Government regulations and WB safeguards. The preparation of the EIAs for the 7 Polders of Package 03 is almost in shape to be finalized. All the 7 EIA reports (for polders 14/1, 15, 16, 17/1, 17/2, 23 and 34/3) were reviewed and adjusted by DDCS&PMSC to respond to the World Bank’s comments of first review. World Bank has also provided comments from their second review. DDCS & PMS Consultant addressed those comments with the assistance of PMU and 3rd Party M&E Consultant. Hence, those were submitted to WB through PMU. After that submission the EIA of Polder 14/1 was reviewed by the Senior Environmental Specialist of WB and CEIP-1 was advised the comments with polder 14/1 as well as with all the EIAs of remaining polders. The comments with EIA of polder 14/1 have been addressed by CEIP-1 and this is ready to submit to WB. CEIP-1 has been addressing the comments of EIA of Polder 14/1 with all other remaining EIAs of Package 03.

From the review of the draft EIA of Package 03, it was felt the EIAs of the Package 03 have been improved compared to the EIAs of Package 01 and Package 02. The audit team feels that the Package 03 EIAs have incorporated the analysis of National Water Act 2013, National River Commission Act 2013 and the Participatory Water Management Guidelines 2014, which were not covered in the EIAs of Packages 01 and 02, though they are mentioned in Package 02. Furthermore, the issues and concerns raised by local people during consultations have been incorporated.

The validity of the Environmental Clearance Certificate (ECC) for both Package 01 and Package 02 expired on 04 November 2019 respectively. CEIP-1 submitted the application for renewal to DoE and received the renewal from DoE which will now be valid up to 04 November 2020.

From the previous Annual Environmental Audits (1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup>), it was felt that the EIAs are too voluminous and EIA authors could look for scope to lessen the volume of the EIAs covering all required sections with adequate information. It was suggested as a possible approach, long sections of descriptive information may be considered to be annexed, making the main body of the document more focused. This recommendation remains in place as the Package 03 EIAs have not been streamlined as suggested.

## 2.1.2. Environmental Action Plans (EAP) of Contractor for Package 01

The EAPs are the polder-specific living documents of the contractor which translate into concrete, site-specific and time-bound actions how the environmental and EHS issues of the EMPs will be addressed. The four polders' specific EAPs are living documents; they have been updated four times. EAPs are Contractor's living documents and are subject to revision as per requirements, which have been revised (Version 4) and submitted to DDSC & PMS Consultants. After review from the Consultants' side, these were submitted to PMU for sharing with The World Bank. The World Bank re-reviewed the Version 4 of EAPs and cleared the document. The EAPs have also been translated in Bangla and Chinese and available in the existing CC plant sides and important construction sites to be followed properly. From the review of the updated EAPs, the audit team found the EAPs in improved stage compared to the prior versions. However, the audit found some of the monitoring (testing) frequencies given in the EAPs {The frequencies shown with the table1 for EAPs are as per the site specific environmental action plan ( Annex-3) of EAPs contractor of Package 01} are not complying with the requirement of EMP (e.g. the EMP specified that air quality would be monitored half-yearly, but the EAPs indicate annually, EMP says noise level will be monitored weekly while EAPs say monthly, EMP mentioned test for drinking water should be half yearly but EAPs say annually The audit team recommends the contractor to revisit the EAPs thoroughly to make it consistent with the EMP and practically useable as a comprehensive guide for staff and laborers. However, the section 6 (Implementation Planning) of EAPs states that "Noise data was shared on a yearly basis with the consultants; from now on noise data is shared on a monthly basis with the consultants/PMU and incorporated in monthly report."

The following deviations were found comparing to the EAPs and EMPs of Package 01:

**Table 1: Comparison in monitoring frequency between CEIP's EMPs and Contractor's EAPs of Package 01**

Monitoring item	EAPs	EMPs	Remarks
Monitoring of Air Quality	Yearly	Half yearly	The WB and PMU agreed to monitor air quality in yearly basis
Monitoring of Noise Quality	Yearly	Weekly	The WB and PMU agreed to monitor noise quality fortnightly and reported in the MPR
Monitoring of Drinking Water Quality	Yearly	Half-yearly	The WB and PMU agreed to monitor drinking water quality in yearly basis
Surface water	Yearly	Yearly (during dry season)	The EAPs are consistent with Project's EMPs.

### 2.1.3. Environmental and Social Management Plan (C-ESMP) of Package 02 Contractor

In Package 02, we use the term C-ESMP which is analogous to the EAP of Package 01. The C-ESMPs are also polder-specific living documents of the contractor which translate how the environmental, EHS and social issues of the EMPs are to be addressed in the way of actionable plans.

Initially, the C-ESMPs for the six polders of Package 02 were provisionally approved by the DDSC&PMSC with the obligation that they will update these with detailed layouts and other necessary elements by December 2017, once the specific campsites are known. The Contractor for Package 02 had indeed submitted six updated C-ESMPs for the six polders of Package 02 to DDSC&PMSC in December 2017. The DDSC&PMSC has also shared these with PMU and Third Party M&E Consultants who reviewed these documents and provided their comments. Subsequently, the C-ESMPs were reviewed by the World Bank who shared their comments. The comments of WB on the C-ESMPs were addressed by the Contractor Package 02 with the assistance of DDSC&PMSC Consultants and Environmental Team of PMU those were approved. However, another round of updating was carried out in 2019, submitted to WB and WB commented on the C-ESMPs. These documents were also approved by the WB. The C-ESMPs have also been translated in Bangla and Chinese and available in the existing CC plant sides and important construction sites to be followed properly.

As part of the audit, the Third Party M&E Consultants reviewed the C-ESMPs. From the review monitoring of air quality, noise level, surface water and drinking water frequencies were found to be inconsistent between the C-ESMPs (as per monitoring checklists with Annexes- 3, 4, 5, 6, 7, 8 and 10 of C-ESMPs) and CEIP's EMPs of Package 02. The following deviations were found comparing to the C-ESMPs and CEIP's EMPs:

**Table 2: Comparison in monitoring frequency between CEIP's EMMPs and Contractor's C-ESMP**

Monitoring item	C-ESMP	EMP	Remarks
Monitoring of Air Quality	Yearly	Half yearly	The WB and PMU agreed to monitor air quality in yearly basis
Monitoring of Noise Quality	Monthly	Weekly	The WB and PMU agreed to monitor noise quality fortnightly and reported in the MPR
Monitoring of Drinking Water Quality	Yearly	Yearly	The EAPs are consistent with Project's EMPs.
Surface water	Yearly	Yearly (during dry season)	The EAPs are consistent with Project's EMPs.

The audit recommends the Contractor of Package 02 revisit the C-ESMPs to ensure they thoroughly cover the EMP requirements and make them an effective guide for full compliance with environmental safeguards.

#### 2.1.4. EHS Risk Assessment of Package 01 and Package 02 Contractors

Both the polder-specific EHS Risk Assessment reports have been cleared by the WB. However, as part of the audit, the EHS Risk Assessment reports of the both contractors of CEIP-1 were reviewed. The audit revealed that the risk assessments were mostly focused on the activities of CC block manufacturing plants, sluices and barges. It was found the risk assessment covers many issues but still there are a few gaps which could be addressed. The audit found discussion on various national relevant laws/ policies, but the C-ESMP does not cover Environmental Conservation Rules (ECR), 1997 which is the basis of the environmental requirement of the various projects in Bangladesh, and which also provides a step-wise guideline to fulfil the environmental requirements as per law. The risk assessed for air quality addressed only dust creation; other aspects could be accounted (e.g. emissions from plants, vehicles). The assessment did not cover any risk those could cause health problem for workers and environmental pollution to environment because of poor drinking water and sanitation facilities. It is recommended that both the contractors address the above-mentioned gaps in their EHS Risk Assessment reports.

#### 2.1.5. Contract document of Package 01 and Package 02 and Implications for Package 03

The audit found that contracts of Package 01 and Package 02 covered the EMP's clauses partially. Penalty clauses suggested in the EMPs have not been incorporated into the contracts of Package 01 and Package 02. The Contractors' contractual obligations in general and specifically (around 20 items) cover mostly matters of Environmental Health and Safety (EHS). It is notable that the Package 02 contract document is comprised of more elaborated environmental-measures budget lines than the contract of Package 01. Considering the smaller number of budget items for EMP implementation in the contract of Package 01, it is recommended to monitor implementation of mitigation measures for each impact area to ensure they are adequately addressed. The bid documents and contract for similar future project should give emphasis and care to ensure all the required clauses are incorporated to fully address the relevant elements of the EMPs including the penalty clauses of the EMPs.

### 2.1.6. Quality Assurance Plan V1.0- August 2016

Audit team reviewed the quality assurance plan of the DDCS & PMS Consultants, and found that it is the same version that was reviewed during the last three audits. The findings are same as previous audits and those are: The document covers the quality assurance for all aspects of the activities of CEIP-1. This document covered two sub-sections related to environmental issues – (1) the major tasks to be done by Environmental Specialist of DDCS&PMS of CEIP-1 and (2) Health and Safety (mostly focused on how Health and Safety Personnel will ensure compliance on health and safety issues of the project). It was adequate in these two respects, but could be strengthened in its statement of how EMP compliance will be monitored and achieved. It is recommended that the DDCS&PMS Consultants will include how EMP compliance will be monitored and achieved with their Quality Assurance Plan.

## 2.2. Systems- Tools, formats, institutional arrangements, protocols, and quality assurance

This section covers the audit findings on Environmental Monitoring tools and guidelines, twice-monthly environmental and field visit reports, and Contractors' Emergency Response Plan.

### 2.2.1. Environmental monitoring tools and guidelines

Both the Contractors have been following the monitoring checklist, which is annexed to the Contractors' EAPs and C-ESMPs as a set of monitoring tools. There are no separate guidelines to ensure compliance with the EMP. DDCS&PMSC and PMU environmental personnel have also been monitoring the implementation of EMP through the indicators of the monitoring checklist that has become part of the EAPs and C-ESMPs. The monitoring has been carried out using these tools which are known as the "Bi-Monthly Environmental Inspection Checklist". Along with the PMU and DDSC&PMSC, the M&E Consultants monitor the environmental compliances with the tools of EAPs, C-ESMPs and EMPs.

### 2.2.2. Twice- monthly environmental inspection report and field reports

#### 2.2.2.1. Package 01

The Contractor has been submitting twice-monthly (bi-monthly) environmental reports to DDCS&PMSC since November 2016. As a part of the 4<sup>th</sup> Annual Audit, the reports of January through December 2019 were reviewed. It was found that the Contractor has been submitting reports using the monitoring checklist formats of the EAP and providing remarks for any notable findings. These reports also include an annex presenting photographs on findings. For a given reporting period, a sampling of sites is covered reflecting the visits made by the concerned EHS officer of the Contractor.

The Environmental Specialist of DDSC&PMSC conducts field visits and shares the field findings after completion of the field visits with the DDSC&PMSC field level staffs and contractor staffs taking note of the deadline for addressing the non-compliance by the contractor. He prepares field visit reports and brings these reports with him during next field visit to see the status of compliances. This is a good approach. The field report of the Environmental Specialist is also shared with the Contractor senior management and PMU as well for gearing up the next course of action. The Senior Environmental Specialist of PMU also carries out field visits to monitor the implementation of EHS practices and give his instruction to improve the EHS practices where required. The field-based Environmental Specialist of the PMU conducts regular field visits in the polders of the Package 01 areas to supervise and monitor the implementation of EHS practices by Contractors which is good. The audit recommends that field-level Environmental Specialist of PMU will prepare a monthly site and polder specific summary findings report for the visited sites, and share the report with the Senior Environmental Specialist of PMU who will take necessary action for smooth implementation of EHS practices where required.

#### **2.2.2.2. Package 02**

Contractor for Package 02 also has been submitting the twice-monthly environmental inspection reports. As a part of the 4th Annual Audit, the reports of January through December 2019 were reviewed. It was found that the Contractor has been submitting reports using the monitoring checklist formats of the C-ESMP and providing remarks for any notable findings. These reports also include an annex presenting photographs on findings. For a given reporting period, a sampling of sites is covered reflecting the visits made by the concerned EHS officer of the Contractor.

As is the case for Package 01, the Environmental Specialist of DDSC&PMSC also conducted field visits for Package 02 and he shares the field findings after completion of the field visits with the DDSC&PMSC field level staff and contractor staff taking note of the deadlines for addressing the non-compliance by the contractor. He prepares field visit reports for Package 02 and brings these reports with him during next field visit to see the status of compliances. This is a good approach. The field report of the Environmental Specialist is also shared with the Contractor senior management and PMU as well for gearing up the next course of action.

Like Package 01, the Senior Environmental Specialist of PMU also carries out field visits in Package 02 areas to monitor the implementation of EHS practices and give his instruction to improve the EHS practices where required. Field based Environmental Specialist of the PMU also conducts regular field visit in different polders of the Package 02 areas to supervise and monitor the implementation of EHS practices by Contractors which is good. The audit recommends that field level Environmental

Specialist of PMU will prepare a monthly site and polder specific summary findings report for the visited sites, and share the report with the Senior Environmental Specialist of PMU who will take necessary action for smooth implementation of EHS practices where required for the Package 02 areas as well.

### 2.2.3. Compliance Performance

From the audit, it was found that compliance registers have been maintained by the contractors of Package 01 and Package 02 in the worksites. In the register, the good environmental practices for a specific site and the items that need to be improved are recorded by the visiting environmental staff along with a deadline. However, no "Non-Compliance Report" or "Non-Compliance Register" was found to exist or to be maintained by DDSC&PMSC though they do have email correspondence directing contractors to correct non-compliance on certain environmental matters. On the other hand, "Non-Compliance Registers" have been kept by the Contractors for every worksite. The issues related to any non-compliance should be mitigated and once the issues are resolved, the items should be noted as complied in the "Non-Compliance Register" by the Contractors, DDSC&PMSC and PMU. The remaining issues should be mitigated as soon as possible and reported to DDSC&PMSC on a routine basis. The record should be tracked in a way that it could be understandable how many of the compliances raised, resolved and pending.

The audit team has reviewed the twice-monthly (so called bi-monthly Environmental Inspection report) Environmental Inspection Reports (which contain an Environmental Inspection Checklist) of Package 01 and Package 02 and has compiled the compliance status as elaborated in the following tables and Annexes 4.6 and 4.7. Table 3 comprises the elements and sub-elements considered by the contractor of Package 01 for the purpose of environmental inspections.

Table 4 that follows gives a comparison on compliances and non-compliances for the whole year and also the last quarter of 2019 for contractor of Package 01. The observations from Table 04 are:

- Based on the data garnered from the Twice-Monthly Environmental Inspection reports, Package 01 considered 34 different elements for inspection and an improved compliance level was observed for most of these elements. From the analysis of compliance and non-compliance of the entire year 2019, it was revealed that 19 elements were 100% compliant for the full year while 19 elements were 100% compliant in the fourth quarter. Thus, compliance level is steady by this measure.
- 28 out of 34 different elements inspected were equally or more compliant in the fourth quarter of 2019 compared to the full year compliance level. Compliance is notably improving by this measure.
- A few problem areas remain in the case of 1-Temporary Facilities Decommissioning, 2-Bank and Slope Protection Works, 3-Re-excavation Works, 4-Hard Rock Pavement, 5-Water Supply and 6-Forklift Operation. The level of compliance for these six elements was as follows,

which reveals decreased or unimproved compliance for these six elements in the last quarter of the reporting year:

Area	1	2	3	4	5	6
Compliance Full Year	*	96%	49%	*	94%	*
Compliance Q4 2019	*	84%	55%	*	84%	*

\*In these dimensions, there were some non-compliance reports but there was an absence of reporting of instances of compliance so percentages are not calculated. As the compliance level for the Temporary Facilities Decommissioning, there were 6 instances where proper re-vegetation was not implemented and 1 case where the close-out check had not been performed. For Hard Rock Revetement, there were seven instances where the alignment was not pre-determined and for Forklift Operation there was on instance where the movement routes were not designated. It is recommended that the Package 01 Contractor will ensure necessary efforts to improve the compliance level.

**Table 3: Elements Comprising the Compliance Inspection Checklist – Package 1**

Elements	Sub-Elements
Construction Camps	Obtaining approval
	Erection of signboard in Bangla and English with project details
	Install accommodation facilities for workers
	Drainage channels installation
	Supply of safe drinking water
	Supply of adequate sanitation
	Solid fencing and demarcation to prevent villagers from entering the premises
	Safety protocols and measures for using electrical appliances
	Infrastructure for adequate
Fuel storage areas	Install hardstand and secondary containment
	Firefighting equipment installation
	Sand and shovel close-by
	Regular checks on physical condition
	The Material Safety Data Sheet (MSDS) from supplier of hazardous substances (diesel, oil, lubricant) will be collected and placed besides containers/storage.
	Spill kit/absorbent mat will be in place to catch any spilled fuels at the location where potential spillage may occur.
	Sufficient hydrants to address potential fire should be equipped at fuel storage area as well as the areas where chemicals/fuels are used.
	Maintain minimum distance during fueling and fueling
	Provide eye protective glass
	Provide hand gloves
Access road construction	Obtaining approval
	Construction of culverts if needed
Temporary Facilities Decommissioning	Agreeing with local authorities on demolition
	Review of Environmental liabilities
	Waste removal
	General re-instatement of site

Elements	Sub-Elements
	Re-vegetation implementation
	Close-out check
Construction and Demolishing of drainage sluices, flushing sluices and inlets	Demolishing debris of sluices and inlets will be disposed of at a site approved by the Engineer.
	Before starting the construction activities of drainage sluices ring bundh and diversion channel will be installed in order to work in dry conditions.
	Disposal of excess soil will be done with no objection from DoE and local authority.
	No waste water from concrete mixing will be disposed of directly to the surface water.
	Steel sheet pile driving will not be done at night.
	The work area will be demarcated clearly.
	Signals will be installed to indicate the entry and exits of vehicles and movement of construction equipment in the work area.
	Prior to every monsoon season all the temporary and permanent drainage structures under construction will be made free from debris.
Construction and re-sectioning of embankments	Pavement (if present) will be removed and disposed of at the premises of BWDB
	Top soil from areas of earth works will not be used for construction works. The top soil (from surface to 15 cm depth) will be removed and preserved for later use of replacing after construction in rehabilitation.
	Disposal of excess soil will be done at site with no objection from DoE and local authority.
	All works will be demarcated clearly.
	Signals will be installed to indicate the entry and exits of vehicles and movement of construction
	The contractor shall manage the top soil (top 15 cms) during earth work activities
	Check the physical condition of excavator regularly
	Conduct the toolbox talk before starting the work
	Training on driving safety at regular interval
	Rise the wire up to enough height before starting the work
Check the physical condition of compaction vehicle	
The bank and slope protection works	Spilling of earth material in surface water will be avoided.
	Turfing will be applied to prevent erosion
	Proper drainage provision will be kept to avoid formation of rain cuts due to surface run off.
Re-excavation works	Spoil plan (volume to be dredged; disposal site to be used; quality of dredged material; applicability of dredged material) to be developed for approval by Engineer.
	Unnecessary re-suspension will be avoided by selection of suitable dredging equipment.
	Temporarily deposition of dredged material will be away from the channel edge to limit damage to streamside and stream habitats.
	Return water will be conveyed through siltation chambers to avoid high loads of fines to be discharged on surface water.

Elements	Sub-Elements
	<p>Where applicable biotechnical Engineering, for example, geo textile, may be used to help stabilize the material.</p> <p>Smothering of important flora and habitats will be avoided.</p> <p>Provide solid demarcation around the excavation</p> <p>Establish sufficient sign /signaling that can be visible at night</p> <p>Erect light reflective signboard</p> <p>Set and check the stability of excavator after certain interval during work</p> <p>Conduct the toolbox talk before starting the work</p>
<p>Manufacture of pre-cast CC blocks</p>	<p>Workers will be equipped with proper PPE.</p> <p>Signals will be installed to indicate the entry and exits and movement of vehicles construction in the work area.</p> <p>Manufacturing will not take place at night.</p> <p>Stacks with sand will be covered or wetted.</p> <p>Provide noise control barrier around the plant area as possible</p> <p>Make a closed chamber for plant operator</p> <p>Periodic hearing check for the exposed workers</p> <p>Shifting duty for the noise exposed areas</p> <p>Spray water at certain intervals in the plant area</p> <p>Wet and clean the aggregate before using</p> <p>Cover/wet dusty parts or materials</p> <p>No operation without the screen or barrier provided with the machine</p> <p>Conduct toolbox talk regularly</p>
<p>Borrow Material</p>	<p>Agreeing on borrow area</p> <p>Document borrow area</p> <p>Perform soil analyses on borrow materials when contamination is expected</p> <p>Prevention of erosion/dust forming</p> <p>Borrow area excavation complying with distance from the embankment as per the technical specification</p> <p>No-Tress pass line fixed with bamboo poles</p> <p>Check the physical condition of excavator regularly</p> <p>Conduct toolbox talk before starting the work</p> <p>Training on driving safety at regular interval</p> <p>Check the physical condition of truck regularly</p>
<p>Hard Rock Revetment</p>	<p>Workers will be equipped with appropriate PPE</p> <p>Special command, wear labor protection including life jacket and hold red flags</p> <p>Forklift transfer prefabricated block strict control speed, orderly loading slow down</p> <p>During barge placement, the prefabricated blocks are balanced and stacked from both sides.</p> <p>The ship is equipped with life-saving equipment</p> <p>Cast positioning ship during slow operation, no zoom too fast to cause the barge violent sloshing</p> <p>Barge sloshing is serious during throwing. It is strictly forbidden to stand on the edge of barge to avoid safety accident</p> <p>Alignment to be pre-determined</p>

Elements	Sub-Elements
	CC Blocks/hard rocks to be stacked/stored at appropriate/designated place/distance
	Maintain and follow work safety protocols/measures
Occupational Health and Safety	Development of Health and Safety plan including emergency procedures
	Train all staff in health and safety
	Provision of HIV, including STI (Sexually Transmitted Infections) information, education and communication
	Provision of PPE and ensuring their use
	Provision and use of life jacket during visiting campsite/worksites by boat
	Installation of first aid facilities at work site and camps with adequate stock
	Provide sanitation facilities where needed
	Provision of safe drinking water to work force (tube-well water, bottled water or pond water)
	Proper signaling of work areas
Public Health and Safety	Notification of the public adjacent to the construction areas
	Installation of dedicated pathways for pedestrians
	Proper signaling of work areas
	Limitation of construction vehicles at public roads during peak hours.
	The temporary traffic detours in settlement areas will be kept free of dust by frequent application of water
	Construction activities will be undertaken according to during daylight working hours between the hours of 07:00-17:00 on weekdays
Water Supply	Providing construction camps with portable water either through installing tubewells (hand pump, shallow and deep tubewell), pond Sand Filter (PSE) or supplying safe bottled water
	Ensuring the location plan of tubewells (used for supplying potable water) that these are not sited near any sanitation facilities as to avoid water pollution
	Maintaining the distance of a tubewell/surface water resource from a soak pit at minimum 15 m
	Maintaining the drainage from the tubewell diverting into the drainage system of the camp area
	Providing separate tubewells for the use of women.
Sanitation	Providing suitable sanitation facilities for the workforce
	Ensuring the location plan of the latrine at least 50 m away from the accommodation facility
	Providing separate latrines for the use of women
	Installing treatment facilities (i.e. septic tank, soak pits etc.) for the sewerage of toilet and camp site wastes.
	Arranging disposal of wastewater from washrooms, kitchens, s, etc. via the camp area's drainage system
Solid Waste Management	Ensuring collection and disposal of solid wastes within the construction camps and work areas

Elements	Sub-Elements
	<p>Taking measure to collect and store inorganic wastes in a safe place within the household and organic wastes cleared on daily basis to waste collector.</p> <p>Establish measures for Waste collection, transportation and disposal systems at approved disposal sites.</p> <p>Disposal of construction and demolition waste.</p>
Waste water	<p>Installation of decanter boxes for washing buckets and cement mixers</p> <p>Installation of proper filtering elements.</p> <p>Carrying out periodic checks and clean-ups for the decanter box.</p> <p>Prioritize reuse of aggregates and water from the decanter box.</p> <p>Ensure safe disposal of liquid wastes generated at camp site.</p>
Air	<p>Regular maintenance of vehicles</p> <p>Covering or wetting of dusty materials</p> <p>Dust suppression by wetting surfaces</p> <p>Impose speed limits</p> <p>Re-vegetate bare surfaces soonest</p>
Noise	<p>Notify nearby population prior to any typical noise events</p> <p>Ensure construction activities do not generate unacceptably high level of noise</p> <p>Restrict working to daylight hours</p> <p>Locate noisy equipment / facilities away from sensitive receptors</p>
Water and Hydrology	<p>Preventing waste, soil, etc. entering in the water system by waste collection, re-vegetation and dust suppression etc.</p> <p>Insure proper drainage of working areas e.g. perimeters lines must be provided with open shallow drains</p>
Flora and Fauna	<p>Agreeing with local authorities on tree felling.</p> <p>Document trees / area of trees.</p> <p>Avoid/prevent un-necessary tree vegetation cutting and clearing.</p> <p>Re-vegetate disturbed construction and ancillary site surfaces.</p> <p>Prevent disturbance of animals</p> <p>Ensuring sufficient free flow in the construction work for fish migration</p>
Monitoring of Air Quality	Performance of air quality tests at selected sensitive sites for parameters SPM 2.5/10, SO <sub>x</sub> , NO <sub>x</sub> and CO during working hours
Monitoring of Noise Quality	Monitoring of noise level (dB) at selected sensitive sites during working hours
Monitoring of Soil Quality	Performance of soil quality tests at selected sites (borrow areas, spill sites) for parameters as organic matter, N, P, K, pH, Salinity, S and Zn.
Monitoring of Surface Water Quality	Performance of analyses on surface water (river, khal, beel and pond) for: pH, TDS, DO, BOD, EC/Salinity and Turbidity.
Monitoring of Drinking Water Quality	Performance of analyses on drinking water for: arsenic, iron, chloride and total faecal coliform bacteria.
Deployment of Environment and Safety Supervisor	Employ one full-time Environment and Safety Supervisor for compliance monitoring of EMP
omplaints and Environmental	Grievance Redress Mechanism will be established.

Elements	Sub-Elements
Incidents	Complaints received from the public or other stakeholders will be registered and recorded and be brought to the attention of the Site Engineer.
	All environmental incidents occurring on the site will be recorded and be brought to the attention of the Site Engineer.
	Action will be taken within 7 working days.
Reporting and Documentation	<p>The following records will be kept at site:</p> <ul style="list-style-type: none"> <li>- Environmental Monitoring Results</li> <li>- Contractors self-assessment record/results</li> <li>- Register of non-compliance</li> <li>- Register of corrective actions</li> <li>- Monthly Environmental Reports</li> </ul>
Training	Environmental training on EMP will be arranged for Construction Field supervisors and Environment & Safety Supervisors.
Construction of the closure dam	The area is separated by demarcation.
	Erection of proper cautionary signboard & signage.
	Provide and uses of required PPE, especially use of life-jacket on barge.
	Provide safe drinking water for staff & workers.
	Assure FAF in site.
	Installed hygienic toilet facilities in site.
	Make available the required Fire extinguisher.
	Assure proper signal to control community access.
	Development of smart waste management system.
EHS training & Tool-box talk before work start.	
Electrical safety	Clearly visible notification on the safe use of electrical appliances
	Check all wirings to prevent any accident, fire due to short circuit
	Rise the wire system up or underground conduit system should be established
	Regular check the switch board and wire system
	Close all the switch board properly. Only responsible will check at regular intervals
	Cover the joint by tape or other insulating materials
Forklift Operation	Designate movement routes for forklifts
	No overloading
	Warning lights/sound during movement of forklifts
	Maintain the speed limit
	Prepare the safe operation manual
	Conduct regular toolbox talk
	Provide forklift safety training
Safety at Barge	Occupational safety measures to be maintained
	Proper anchorage
	Balanced loading
	Workers to use PPE
	Maintain speed limit of forklift
	Regular toolbox talk
	Separate lane for pedestrian and forklift
	Make a forklift safety procedure
	Regular check and maintenance of the scraper

**Table 4: Summary Status of Compliance and Non-Compliance and comparison between whole year and Quarter 4 in 2019, Package-01**

S.N	Inspected Sites	No. of Compliance in a Year	No. of Non-Compliance in a Year	% of Compliance in a year	% of Non-Compliance in a year	No. of Compliance in Q4	No. of Non-Compliance in Q4	% of Compliance in Q4	% of Non-Compliance in Q4
1	Construction Camps	638	0	100.0	0.0	134	0	100.0	0.0
2	Fuel storage areas	413	0	100.0	0.0	125	0	100.0	0.0
3	Access road construction	119	0	100.0	0.0	29	0	100.0	0.0
4	Temporary Facilities Decommissioning	0	7	0.0	100.0	0	7	0.0	100.0
5	Construction and Demolishing of drainage sluices, flushing sluices and inlets	620	20	96.9	3.1	62	2	96.9	3.1
6	Construction and re-sectioning of embankments	223	242	48.0	52.0	61	44	58.1	41.9
7	The bank and slope protection works	93	4	95.9	4.1	21	4	84.0	16.0
8	Re-excavation works	49	52	48.5	51.5	13	16	44.8	55.2
9	Manufacture of pre-cast CC blocks	346	0	100.0	0.0	58	0	100.0	0.0
10	Borrow Material	426	64	86.9	13.1	102	10	91.1	8.9
11	Hard Rock Revetment	0	7	0.0	100.0	0	7	0.0	100.0
12	Occupational Health and Safety	694	0	100.0	0.0	154	0	100.0	0.0
13	Public Health and Safety	549	0	100.0	0.0	117	0	100.0	0.0
14	Water Supply	132	8	94.3	5.7	42	8	84.0	16.0
15	Sanitation	291	0	100.0	0.0	75	0	100.0	0.0
16	Solid Waste Management	218	123	63.9	36.1	56	15	78.9	21.1
17	Waste water	199	259	43.4	56.6	55	43	56.1	43.9
18	Air	341	0	100.0	0.0	71	0	100.0	0.0
19	Noise	368	0	100.0	0.0	80	0	100.0	0.0
20	Water and Hydrology	92	88	51.1	48.9	20	16	55.6	44.4
21	Flora and Fauna	257	97	72.6	27.4	41	25	62.1	37.9

S.N	Inspected Sites	No. of Compliance in a Year	No. of Non-Compliance in a Year	% of Compliance in a year	% of Non-Compliance in a year	No. of Compliance in Q4	No. of Non-Compliance in Q4	% of Compliance in Q4	% of Non-Compliance in Q4
22	Monitoring of Air Quality	92	0	100.0	0.0	20	0	100.0	0.0
23	Monitoring of Noise Quality	92	0	100.0	0.0	20	0	100.0	0.0
24	Monitoring of Soil Quality	92	0	100.0	0.0	20	0	100.0	0.0
25	Monitoring of Surface Water Quality	92	0	100.0	0.0	20	0	100.0	0.0
26	Monitoring of Drinking Water Quality	92	0	100.0	0.0	20	0	100.0	0.0
27	Deployment of Environment and Safety Supervisor	28	0	100.0	0.0	10	0	100.0	0.0
28	Complaints and Environmental Incidents	301	20	93.8	6.2	67	2	97.1	2.9
29	Reporting and Documentation	428	0	100.0	0.0	68	0	100.0	0.0
30	Training	30	0	100.0	0.0	12	0	100.0	0.0
31	Construction of the closure dam	40	0	100.0	0.0	40	0	100.0	0.0
32	Electrical safety	33	0	100.0	0.0	33	0	100.0	0.0
33	Forklift Operation	na	1	na	na	na	1	na	na
34	Safety at Barge	27	3	90.0	10.0	27	3	90.0	10.0

Table 5 comprises the elements and sub-elements considered by the contractor of Package 02 for the purpose of environmental inspections. Table 6 gives a comparison on compliances and non-compliances for the whole year and also the last quarter of 2019 for contractor of Package 02. The observations from Table 05 are:

- Based on the data garnered from the Twice-Monthly Environmental Inspection reports, Package 01, the audit team considered 17 different elements for inspection and an improved compliance level was observed for most of these elements. From the analysis of compliance and non-compliance of the entire year 2019, it was revealed that 5 elements were 100% compliant for the full year while 5 elements were 100% compliant in the fourth quarter. Thus, compliance level is steady by this measure.
- 11 out of 17 different elements inspected were equally or more compliant in the fourth quarter of 2019 compared to the full year compliance level. Compliance is notably improving by this measure.
- A few problem areas remain in the case of 1-construction of base camp, 2-fuel storage areas, 3-access road to the base camp, 4-water supply, 5-Sanitation, 6-waste water and 7-complaints and environmental incidents. The level of compliance for these seven elements in the full year versus only for the fourth quarter of 2019 is show here:

Area	1	2	3	4	5	6	7
Compliance Full Year	97%	98%	67%	87%	97%	60%	73%
Compliance Q4 2019	97%	97%	65%	87%	97%	59%	68%

**Table 5: Elements Comprising the Compliance Inspection Checklist – Package 2**

Elements	Sub-elements
Construction of Base camp	Obtaining approval for facilities construction work
	Erection of signboard in Bangla and English with project details
	Install accommodation facilities Engineers and other staff/workers
	Drainage channels installation
	Supply of safe drinking water
	Supply of adequate sanitation facilities
	Safety fencing/Barriers and Entry Kiosks
	Stack yard for plant and equipment
	Construction of store room/warehouse
	Temporary workshop facilities
	Arrangement of sufficient lighting facilities in the camp area
Fuel storage areas	Install hardstand and secondary containment
	Fire-fighting equipment installation
	Sand and shovel close-by
	Regular checks on physical condition

Elements	Sub-elements
	Approval fuel storage
Access road to the base camp	Obtaining approval
	Construction of culverts if needed
	Construction of temporary road
Training	Environmental training on EMP will be arranged for Construction Field supervisors and Environment & Safety Supervisors
Occupational Health and safety	Development of Health and Safety Plan including emergency procedures
	Train all staff in health and safety
	Provision of HIV, including STI (sexually transmitted infections) information, education and communication
	Provision of PPE and ensuring their use
	Provision and use of life jacket during visiting campsite/worksites by boat
	Installation of first aid facilities at work site and camps with adequate stock
	Provide sanitation facilities where needed
	Provision of safe drinking water to work force (tube-well water, bottled water or pond water)
	Proper signaling of work areas
Public Health and Safety	Notification of the public adjacent to the construction areas
	Installation of diversion signboard with warning for dedicated pathways for pedestrians
	Proper signaling of work areas
	Limitation of construction vehicles at public roads during peak hours
	The temporary traffic detours in settlement areas will be kept free of dust by frequent application of water
	Construction activities will be undertaken according to during daylight working hours between the hours of 07:00 – 17:00 on weekdays
Water Supply	Providing construction camps with potable water either through installing tube wells (hand pump, shallow and deep tubewell), Pond Sand Filter (PSF) or supplying safe bottled water
	Ensuring the location plan of tube wells (used for supplying potable water) that these are not sited near any sanitation facilities as to avoid water pollution
	Maintaining the distance of a tube well / surface water resource from a soak pit at minimum 15m
	Maintaining the drainage from the tube well diverting into the drainage system of the camp area
	Providing separate tube wells for the use of women
Sanitation	Providing suitable sanitation facilities for the workforce
	Ensuring the location plan of the latrine at least 50 meters away from the accommodation facility

Elements	Sub-elements
	<p>Providing separate latrines for the use of women</p> <p>Installing treatment facilities (i.e. septic tank, soak pits, etc) for sewerage of toilet and camp site wastes</p> <p>Arranging disposal of wastewater from washrooms, kitchens, etc. via the camp area's drainage system</p>
Solid Waste Management	<p>Ensuring collection and disposal of solid wastes within the construction camps and work areas</p> <p>Taking measure to collect and store inorganic wastes in a safe place within the household and organic wastes cleared on daily basis to waste collector</p> <p>Establish measures for Waste collection, transportation and disposal systems at approved disposal sites</p> <p>Disposal of construction and demolition waste</p>
Waste water	<p>Installation of decanter boxes for washing buckets and cement mixers</p> <p>Installation of proper filtering elements</p> <p>Carrying out periodic checks and clean-ups for the decanter box</p> <p>Prioritize reuse of aggregates and water from the decanter box</p> <p>Ensure safe disposal of liquid wastes generated at camp site</p>
Air	<p>Regular maintenance of vehicles</p> <p>Covering or wetting of dusty materials</p> <p>Dust suppression by wetting surfaces</p> <p>Impose speed limits</p> <p>Re-vegetate bare surfaces soonest</p>
Noise	<p>Notify nearby population prior to any typical noise events</p> <p>Ensure construction activities do not generate unacceptably high level of noise</p> <p>Restrict working to daylight hours</p> <p>Locate noisy equipment / facilities away from sensitive receptors</p>
Water and Hydrology	<p>Preventing waste, soil, etc entering in the water system by waste collection, re-vegetation and dust suppression etc</p> <p>Ensure proper drainage of working areas e.g., perimeters lines must be provided with open shallow drains</p>
Monitoring of Drinking Water Quality	<p>Performance of analyses on drinking water for: arsenic, iron, chloride and total fecal coliform bacteria</p>
Deployment of Environment and Safety Supervisor	<p>Employ one full-time Environment and Safety Supervisor for compliance monitoring of EMP</p>
Complaints and Environmental Incidents	<p>Grievance Redress Mechanism will be established</p> <p>Complaints received from the public or other stakeholders will be registered and recorded and be brought to the attention of the Site Engineer</p> <p>All environmental incidents occurring on the site will be recorded and be brought to the attention of the Site Engineer</p> <p>Action will be taken within 7 working days</p>

Elements	Sub-elements
Reporting and Documentation	The following records will be kept at site:
	Environmental Monitoring Results
	Contractors self-assessment record/results
	Register of non-compliance
	Register of corrective actions
	Monthly Environmental Reports



**Table 6: Summary Status of Compliance and Non-Compliance and comparison between whole year and Quarter 4 in 2019, Package-02**

Sl	Inspected Sites	No. of Compliance in a Year	No. of Non-Compliance in a Year	%of Compliance in a year	%of Non-Compliance in a year	Number of Compliance in Q4	Number of Non-Compliance in Q4	%of Compliance in Q4	%of Non-Compliance in Q4
1	Construction of Base camp	1303	37	97.2	2.8	379	12	96.93	3.07
2	Fuel storage areas	585	15	97.5	2.5	169	6	96.57	3.43
3	Access road to the base camp	244	122	66.7	33.3	64	35	64.65	35.35
4	Training	122	0	100.0	0.0	35	0	100.00	0.00
5	Occupational Health and safety	1040	58	94.7	5.3	303	12	96.19	3.81
6	Public Health and Safety	660	72	90.2	9.8	192	18	91.43	8.57
7	Water Supply	532	78	87.2	12.8	152	23	86.86	13.14
8	Sanitation	590	20	96.7	3.3	169	6	96.57	3.43
9	Solid Waste Management	385	102	79.1	20.9	112	28	80.00	20.00
10	Waste water	366	244	60.0	40.0	104	71	59.43	40.57
11	Air	567	43	93.0	7.0	163	12	93.14	6.86
12	Noise	488	0	100.0	0.0	140	0	100.00	0.00
13	Water and Hydrology	244	0	100.0	0.0	70	0	100.00	0.00
14	Monitoring of Drinking Water Quality	122	0	100.0	0.0	35	0	100.00	0.00
15	Deployment of Environment and Safety Supervisor	122	0	100.0	0.0	35	0	100.00	0.00
16	Complaints and Environmental Incidents	366	138	72.6	27.4	98	47	67.59	32.41
17	Reporting and Documentation	122	0	100.0	0.0	35	0	100.00	0.00

#### 2.2.4. Grievance Redress Mechanism

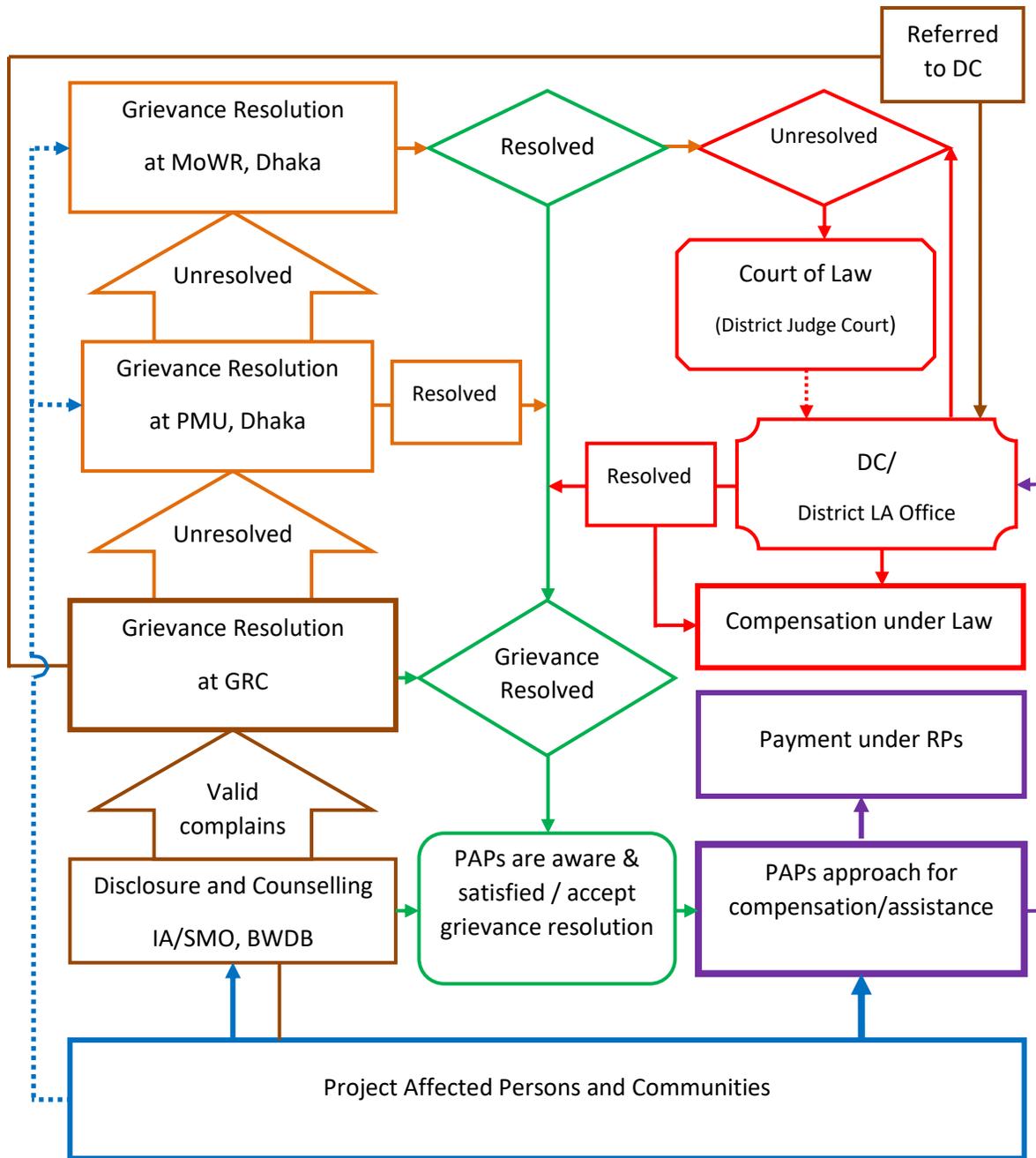
Several social and environmental issues may arise during implementation stages of the Project. Following are some of the environmental issues that could be subjected to grievances from the affected people, concerned public, construction workers and civil society members:

- Soil, water, dust, noise and air pollution from construction related activities;
- Traffic movement and congestion;
- Lack of adequate safety at the construction areas and approach roads;
- Lack of water and sanitation facilities at the construction sites/camps;
- Waste disposal;
- Conflicts among construction workers and with local community;
- Disturbances to flora and fauna;
- Failure to comply with standards or contractual obligations.

Of course, the GRM will also entertain concerns about matters of resettlement and land acquisition including livelihood restoration.

In order to facilitate the resolution of affected people's concerns, complaints, and grievances about the social and environmental performance of the project, a Grievance Redress Mechanism (GRM) has been established which aims to provide a time bound and transparent mechanism to voice and resolve social and environmental concerns. CEIP-1 has designed the GRM and the PMU, with the assistance of the DDSC&PMSC's team, has been putting it in place. The grievance mechanism has been scaled to the risks and adverse impacts of the project. It has addressed affected people's concerns and complaints promptly, it is designed to use an understandable and transparent process that is gender responsive, culturally appropriate, and readily accessible to all segments of the affected people at no cost and without retribution. The mechanism does not impede access to the country's judicial or administrative remedies. The affected people were appropriately informed about the detailed mechanism by a Bengali-language brochure. One concern is that there have been only four (4) grievances recorded/reported during 2019, which could be indicative of an absence of awareness or access to the GRM than the absence of grievances.

The GRM Process is depicted in the following figure.



The Project Management Unit (PMU) and Project Implementation Organizations (PIOs) are making the public aware of the GRM through public awareness campaigns by its Resettlement Action Plan (RAP) implementing Team. The contact phone number of the respective PIOs and the PMU is serving as a hotline for complaints and have been publicized through the media and placed on notice boards outside their offices and at construction sites. In past years, the project information brochure including information on the GRM has been widely disseminated throughout the embankment by the RAP implementing team and PIOs. Grievances can be filed in writing to any member of the Committee.

One GRC has been formed for each Union with union level representation to ensure easy accessibility by the project affected persons and communities as comprised below:

#### Membership of GRC

1. Executive Engineer (BWDB Division Office) : Convener
2. Representative of the RAP Implementing NGO : Member -Secretary
3. Local UP Member / Ward Council Member : Member
4. Teacher from Local Educational Institution (nominated by Upazila Administration) : Member
5. Representative from Local Women's Group : Member
6. Representative from the PAP Group : Member

#### 2.2.4.1. Grievance Redress Mechanism (GRM) for Package-01

There are 15 Grievance Redress Committees (GRC) at local level for Package 01 out of 15 GRCs required. These GRCs have been formed earlier at each Union of all Polders under Package 01 with the representatives of BWDB, Union Parishad, educational institute, PAPs and DDCS&PMS Consultants. The Project's stated target is to try to resolve all cases within four weeks from the date of GRC receiving the complaint and trying to resolve the cases locally.

A total number of 151 complaints/grievances have been received up to December 2019 by GRC in Package-01. Table 7 shows the types of complaints received during the January-December, 2019 period in Package 01.

**Table 7: Type of complaints received in Package 01 during January-December, 2019 period**

SL	Nature of Grievances	Polder Number				Total
		P-32	P-33	P-35/1	P-35/3	
1	Application for shifting the Proposed Alignment	-	3	1	3	7
2	Application for Crops Compensation	-	1	-	-	1
3	Application for Fish Gher Compensation	-	1	-	41	42
4	Application for Land Compensation	-	1	-	-	1
5	Application for replacement of EP ID Name	5	1	3	-	9
6	Application for the land acquisition	-	-	-	2	2
7	Application for Re-Compensation for dissatisfaction	20	3	-	1	24
8	Request for Proper Solution for damaging the land for soil collection by the contractor	1	1	-	-	2
9	Application for compensation for dismantling the brick soling road	-	-	-	1	1
10	Application for Structure Compensation	19	2	17	18	56
11	Application for Trees Compensation	-	1	2	1	4
12	Application for structure compensation on own land	-	-	2	-	2
<b>Grand Total</b>		<b>45</b>	<b>14</b>	<b>25</b>	<b>67</b>	<b>151</b>

Source: MPR of Social Safeguards Management, December 2019, DDCS&PMS Consultant

Among the complaints, 37 cases have been resolved at the entry level and 114 cases have been resolved through investigation and formal hearing by GRC. Table-8 shows the status of complaints/cases received and resolved so far by GRC.

**Table 8: Summary of Disposition of Grievances in Package 01**

Sl. No.	District	Polder no	Total Complaints/ cases	Resolved by field level investigation	Resolved by GRC	Pending with GRC
1	Khulna	32	45	16	29	00
2	Khulna	33	14	8	06	00
3	Bagerhat	35/1	25	6	19	00
4	Bagerhat	35/3	67	7	60	00
<b>Total</b>			<b>151</b>	<b>37</b>	<b>114</b>	<b>00</b>

Source : MPR, December 2019, DDCS&PMS Consultant

Though awareness raising of the GRM covers both social and environmental concerns, no grievance has been registered specific to environmental issues till now. The environmental hazards caused during construction are being minimized and are localized which local people generally tolerate as they consider that the project will provide many benefits to them. Consultant has instructed the Contractor to avoid and/or mitigate even the minor and localized pollution.

#### 2.2.4.2. Grievance Redress Mechanism (GRM) for Package-02

Union-wise GRCs have been established between August and October 2017 in the Package 02 Polders (39/2C, 40/2, 41/1, 43/2C, 47/2 and 48). Table-12 lists the 21 GRCs for Package 02 polder-wise.

**Table 9: Polder-wise Date of Establishment and Location of Grievance Redress Committees of Package 02**

Sl. No.	Polder Name	Number of Committees	Location	Date of Formation
1.	39/2C	9	Bhandaria Pourosova, Bhandaria Pirojpur	05/10/2017
2.			1 No. Vitabaria Union, Bhandaria Pirojpur	05/10/2017
3.			2 No. Nadmullah Shialkathi Union, Bhandaria, Pirojpur	05/10/2017
4.			3 No. Telikhali Union, Bhandaria, Pirojpur	05/10/2017
5.			4 No. Ekri Union, Bhandaria, Pirojpur	05/10/2017
6.			5 No. Dhawa Union, Bhandaria, Pirojpur	05/10/2017
7.			2 No. Dhanisafa Union, Mothbaria, Pirojpur	05/10/2017
8.			3 No. Mirukhali Union, Mothbaria, Pirojpur	05/10/2017
9.			1 No. Chechri Rampur, Union, Mothbaria, Pirojpur	05/10/2017
10.	40/2	3	Pathorghata Pourosova, Pathorghata Barguna	30/08/2017
11.			Charduani Union, Pathorghata Barguna	30/08/2017
12.			4 No. Pathorghata Union, Pathorghata, Barguna	30/08/2017
13.	41/1	3	Barguna Pourosova, Barguna	30/08/2017
14.			5 No. Aila Patakata Union, Barguna	30/08/2017
15.			6 No. Burir Char Union, Barguna	30/08/2017
16.	43/2C	2	Amkhola Union, Golachipa, Patuakhali	27/08/2017
17.			Golkhali Union, Golachipa, Patuakhali	27/08/2017

Sl. No.	Polder Name	Number of Committees	Location	Date of Formation
18.	47/2	1	Dalbu Gonj Union, Kolapara, Patuakhali	07/09/2017
19.	48	3	Kuakata Pourosova, Patuakhali	07/09/2017
20.			Dhulashar Union, Kolapara, Patuakhali	07/09/2017
21.			Lotachapli Union, Kolapara, Patuakhali	07/09/2017

There are 21 Grievance Redress Committees (GRC) at local level for Package-02 since this Package covers 21 unions. Grievance Redress Committees (GRC) have been formed earlier at each Union of all Polders under Package-2 with the representatives of BWDB, Union Parishad, educational institute, PAPs and DDCSPMS Consultants. Efforts have been made to reach resolution of all cases within a four-week time from the date of receiving the complaint and trying to resolve locally.

A total number of 45 complaints/grievances have been received up to December 2019 by GRC in Package 02. Table 10 shows the types of complaints received during the January-December, 2019 period in Package 02.

**Table 10: Type of complaints received in Package 02 during January-December, 2019 period**

SL	Nature of Grievances	Polder Number			Total
		P-40/2	P-41/1	P-43/2C	
1	Application for Re-Compensation for dissatisfaction	10	16	17	43
2	Application for Structure Compensation	2	-		2
<b>Grand Total</b>		<b>12</b>	<b>16</b>	<b>17</b>	<b>45</b>

Source : February 19, 2020, DDCS&PMS Consultant

Among the complaints, 25 cases have been resolved at the entry level. The remaining 20 cases have been placed for further field investigation by GRC. Table-8 shows the status of complaints/cases received and resolved so far by GRC.

**Table 11: Summary of Disposition of Grievances in Package 02**

Sl. No.	District	Polder no	Total Complaints/cases	Resolved by field level investigation	Resolved by GRC	Pending with GRC
1	Pirojpur	39/2C	0	0	0	0
2	Barguna	40/2	12	0	0	12
3	Barguna	41/1	16	8	0	8
4	Patuakhali	43/2C	17	17	0	0
5	Patuakhali	47/2	0	0	0	0
6	Patuakhali	48	0	0	0	0
<b>Total</b>			<b>45</b>	<b>25</b>	<b>0</b>	<b>20</b>

Source: MPR, December, 2019, DDCS&PMS Consultants

In Package 02 areas, the GRM covers both social and environmental concerns, no formal grievance has been also registered specific to environmental issues till now. The environmental hazards caused during construction are being minimized and are localized which local people generally tolerate as they consider that the project will provide many benefits to them. Consultant has instructed the Contractor to avoid and/or mitigate even the minor and localized pollution.

### 2.2.5. Monitoring Testing results

No test for air quality, surface and drinking water, or soil was conducted by either the contractors of Package 01 or Package 02 during the period covered by this audit. Noise level measurements were, however, undertaken. It is recommended that both the contractors carry out required monitoring testing in every year.

### 2.2.6. Contractor's Emergency Response Plan

#### 2.2.6.1 Package 01

The Contractor has prepared its emergency response plan to ensure the implementation of the occupation health, safety standards of the Project and as stipulated in the company's environment, occupation health and safety policy. These standards aim to form a safe, healthy, civilized, clean and tidy cultural environment in the entire Project, and to continuously improve the management level of engineering construction. It is designed to guide rapid response to the potential EHS emergencies (natural and accidental) that might occur due to project activities or natural disasters. At the same time, it will minimize the damage and loss to the personnel, local inhabitants and the company. This plan cites emergency resources, emergency plans in case of accidents, prevention of casualties, emergency response procedures and site emergency and rescue procedures for fire emergency, height falls, mechanical injury, lifting damage, and electric shock accident, emergency measures for a collapse accident, traffic accident and heat stroke. It also covers environmental management and control measures for dust control, noise control, solid waste control, control of water and air pollution. The plan also reveals how the Contractor will improve its emergency rescue ability and strengthening safety education of project staffs. The Audit Team finds that the plan is a helpful document, which will reduce the EHS risks. On the other hand, the Team also recommends that the Contractor facilitate training for its staff on the emergency response plan so that they are conversant with its contents.

The emergency response plan is also a living document; it has been used by the Contractor of Package 01 continuously. The emergency response plan covers both natural and man-made disasters, and accidents and injuries. As injuries/accidents have been experienced by the Contractor continuously (mostly minor accidents), the emergency response plan has been utilized continuously. Examples of this are the actions being taken for accident/injury victims including the reporting, or awareness raising by the Contractor among its staff members/workers regarding the preparedness measures for any anticipated disaster such as the Fani cyclone which took place in Bangladesh in May, 2019.

### 2.2.6.2. Package 02

The Contractor 02 has also prepared its emergency plan and from the audit it is found to be a comprehensive and good document that would allow the contractor to face a wide variety of emergency situations.

The emergency response plan has been also used by the Contractor of Package 02 continuously. The emergency response plan of Contractor of Package 02 covers both natural and man-made disasters, and accidents and injuries. As injuries/accidents have been experienced by the Contractor continuously (mostly minor accidents), the emergency response plan has been utilized continuously similarly to what has been described above with respect to Package 01.

## 2.3. Environmental staff resources

For implementation, supervision and monitoring of EMP compliance, the following staff resources have been deployed.

**Table 12: Environmental, Health and Safety Personnel**

Sl.	Name	Designation	Place of posting	Mobile No.	E-mail Address
01	Md. Habibur Rahman	Project Director	Dhaka	01712008322	pdpmuceip@gmail.com
02	Jean Henry (Harrie) Laboyrie	Team Leader, CEIP-1	Dhaka	01935146720	<a href="mailto:harrie.laboyrie@rhdhv.com">harrie.laboyrie@rhdhv.com</a>
03	Md. Habibur Rahman	Deputy Team Leader, CEIP-1	Dhaka	01755627386	habibceip@yahoo.com
04	Jan T. Twarowski	Team Leader, Third Party M&E Consultants	Dhaka	01745573470	tl.me.ceip1gmail.com
05	Md. Asraful Alam	Executive Engineer, CEIP-1, BWDB, Khulna	Khulna	01318235115	xen.ceip1.khulna@gmail.com
06	Mr. Mahidur Rahman	Deputy Team Leader, Third Party M&E Consultant	Dhaka	01711173629	dtl.me.ceip1@gmail.com

Sl.	Name	Designation	Place of posting	Mobile No.	E-mail Address
07	Dr. Abu H. Murshid	International Environ. Specialist, Third Party M&E Consultant	Dhaka	01785073802	amurshid@aol.com
08	A.K.M.Rezaul Haque Khan	Environmental Specialist Third Party M&E Consultant	Dhaka	01712142502	env.me.ceip1.sheladia@gmail.com
09	Md. Amir Faisal	PMU Sr. Environment Specialist	Dhaka	01715-315227	faisal.mdamir@gmail.com
10	Dr. Md. Towhidul Islam	Field level Environmental Specialist, PMU	Khulna	01911493918	towhidenvs@gmail.com
11	Mr. M.A. Saleque	PMU Senior Revenue Officer	Dhaka	01785214443	masaleque@gmail.com
12	Mustafizur Rahman	Senior Social Specialist, PMU	Dhaka	01714040544	mustafizurr@gmail.com
13	Mr. Akbar Hossain	Senior Forestry Officer, PMU	Dhaka	01711543475	ahossain56.bd@gmail.com
14	Kamal Najmus Salehin,	Communication Officer, PMU	Dhaka	01716408919	s.kamal17@gmail.com
15	Zahiruddin Md. Babar	Social Specialist/ Economist, PMU	Khulna	01711005885	zahir_babar@yahoo.com
16	GM. Akram Hossain	Resident Engineer-2	Patuakhali	01713040037	gmakram68@gmail.com
17	A.K.M. Sayeed Uddin	Deputy Resident Engineer-1	Khulna	01919432163	akmsayeed1951@gmail.com
18	Mohammad Ali	Deputy Resident Engineer-2, CEIP-1	Patuakhali	01711320432	ceip1patuakhali@gmail.com
19	Abu Bakr Siddique	Environment Specialist, CEIP-1	Dhaka	01795095607	abs_1949@yahoo.com
20	Md. Delwar Hossain	Quality Control Specialist	Khulna	01712614024	delwarhossain03@yahoo.com
21	Md. Saiful Islam	Construction Supervision Engineer-1	Khulna	01727332986	saifulkhulna@gmail.com
22	Shyamal Kumar Datta	Construction Supervision Engineer-2	Khulna	01711233580	skduta91@yahoo.com
23	Md. Harunur Rashid	Quality Control Specialist	Patuakhali	01720043618	engrharun7@gmail.com
24	A.K.M.Mazibur Rahman	Construction Supervision Engineer	Patuakhali	01712540050	akmmr1955@gmail.com
25	Sadequl Islam	Construction Supervision Engineer	Patuakhali	01822213320	Sadequl477@gmail.com
26	Md. Ghiasuddin Ahmed	Construction Supervision Engineer	Patuakhali	01711171011	ghiasbd@gmail.com
27	Mr. Sun Huaxin	Project Manager (Contractor), CHWE	Khulna	01991996805	chwe_ceip1_bd@hotmail.com
28	Mr. Jiakai	Quality Control and Environment, Health and Safety Officer in-charge, CHWE, Package-1	Khulna	01876298227	Jiakai_ceip@163.com

Sl.	Name	Designation	Place of posting	Mobile No.	E-mail Address
29	Mr. Ren Gaofei	Environment, Health and Safety in-charge, CHWE, Package-1	Khulna	01761931689	18738153286@163.com
30	Mr. Faysal Ahmed Taj,	EHS Officer, Khulna, Package-1	Khulna	01937231284	fayahmedtaj20110@gmail.com
31	Song Kunpeng	Chinese EHS Manager	Polder 32	-	-
32	Md. Afrid	Local EHS officer	Polder 32	01766073473	-
33	Li Bo	Chinese EHS Manager	Polder 35/1	-	-
34	Masud Rana	Local EHS officer	Polder 35/1	01792094033	-
35	Mr. Li Guofang	Acting Project Manager, (Contractor), CICO, Package-2	Dhaka	01927409142	lclv2005@163.com
36	Ma Dian Yong	Environment, Health and Safety in-Charge, Package	Patuakhali	01617776707	madianyong1218@gmail.com
37	Chen De Yu	Chinese EHS Manager	Polder 39/2C	01888321775	-
38	Mr. Taher	Local EHS Officer	Polder 39/2C	01712003561	-
39	Bu Shidong	Chinese EHS Manager	Polder 40/2	01739824919	-
40	Mr. Nazmul Ahsan	Local EHS Officer	Polder 40/2	01724124990	-
41	Tan Qingsong	Chinese EHS Manager	Polder 41/1	01647239885	-
42	Md. Azahar	Local EHS Officer	Polder 41/1	01797181079	-
43	Xiao Yao	Chinese EHS Manager	Polder 43/2C	01646619937	-
44	Hemayet Uddin	Local EHS Officer	Polder 43/2C	01719459671	-
45	Xiao Yao	Chinese EHS Manager	Polder 47/2	01646619937	-
46	Mr. Heron	Local EHS Officer	Polder 47/2	01711668551	-
47	Yang Sen	Chinese EHS Manager	Polder 48	01646571109	-
48	Mr. Emon	Local EHS Officer	Polder 48	01939648808	-

Note: During the field visit in **January 2020** the name of the EHS Officers of Polder 40/2 mentioned in the Audit Report were not working and both of EHS Officers mentioned in the Audit Report were engaged for the roles before. As of mid-March 2020 (during field visit of PMU and DDCS&PMS Consultants Environmental Specialists) both of previous local and a Chinese EHS Officers have been employed after an interview taken by the Environmental Specialists visiting the polder.

## 2.4. Necessary equipment and arrangements for environmental monitoring and testing

Tests for Air Quality, Surface and drinking water, soil and noise level were conducted by both contractor of Package 01 Package 02 during the audit covering period along with regular noise level testing. This testing is generally done monthly, though it is done bi-monthly for the sites having much emissions, e.g. CC block manufacturing plants. In case of a result exceeding the standard limit, the Contractors were found to have taken various measures depending on the issue (e.g. ensure use of earplug/muffs, fencing/noise barrier, rotational work schedule for workers work in high noise site, providing).

During the reporting period, the Contractor of Package 02 carried out hearing tests for 20 nos. of automated CC block manufacturing Plant Operators who are directly involved with operation. It is worth mentioning that the Operators use ear plug/ muffs to reduce the risk of noise exposure. The hearing tests found no damage to hearing of any operators.

The manufacturing of the CC block was completed before and during the reporting period, no CC block manufacturing works were done in 2019. Considering this, the Contractor of Package 01 did not carry out any hearing tests.

Both the contractors conducted tests for air, drinking water, surface water and soil from the renowned Consultancy for Research and Testing Services (CRTS) of Department of Civil Engineering of Khulna University of Engineering & Technology (KUET).

### **From the testing of the Contractor of Package 01 the following findings were revealed:**

For drinking water, 26 samples of drinking water were tested for parameters Arsenic, Iron, Chloride, Total and Fecal Coliform. It was observed from the test results that 12 of the samples contained total coliform above the permissible limit and 7 samples contained fecal coliform more than the permissible limit. Moreover, 1 sample was found to contain Chloride above the permissible limit. It was ascertained that the Contractor stopped providing drinking water to the workers from the sources of the tested samples which failed to meet the required standard for drinking water.

For surface water, a total of 28 surface water samples were collected and tested for parameters like pH, Turbidity, Total Dissolved Solids (TDS), Chloride, Dissolved Oxygen (DO) and Biological Oxygen Demand (BOD5). Test results of all samples were found to be within permissible limit except BOD5 contents. Out of the 28 samples, 18 samples had higher BOD contents for fishery for irrigation purposes. As the surface water sources sampled are natural water bodies (e.g. canal, river), the parameters may deviate/change due to seasonal changes and contamination from other sources. The Contractor

reported that no discharge of waste water or wastes are being dumped to the sources from where samples were collected.

For soil quality, a total of 24 samples of soil were collected and tested by the Package 01 Contractor for analysis of pH, Chloride, Nitrogen content, Phosphorous content and Sulphur content. The soils have higher content of organic matter, Sulphur and Nitrogen content in most cases and lower content of Phosphorous in all cases.

Air quality tests of 18 locations of different polders of Package 01 were performed in Package 01 areas. The parameters tested were PM10, PM 2.5, SO2, NOx and CO. According to the test results, the Air Quality Index (AQI) Ratings are provided as follows:

**Table 13: Summary of Air Quality in Package 01 areas**

Parameter	Air Quality Index Ratings				Remarks
	Good (0-50)	Moderate (51-100)	Caution (101-150)	Unhealthy (151-200)	
PM <sub>10</sub>	13	5	-	-	
PM <sub>2.5</sub>	8	10	-	-	
SO <sub>2</sub>	16	2	-	-	
NO <sub>x</sub>	9	5	3	1	Caution condition found: 1. DS-11, Polder 32 (N 487107.513 E 441636.095) 2. DS-10, Polder 32 (N 491125 E443228.285) 3. Main Camp, Polder 32 (N 495532.420 E 448382.430) Unhealthy condition found: 1. DS-10, Polder 33 (N 22.52512829 E 89.56547687)
CO	18	-	-	-	

Note: For Unhealthy and Caution conditions, the air quality exceeds the permissible limits. For Good and Moderate conditions, the air quality is within permissible limits.

As mitigation measures, the Contractor of Package 01 is continuing regular maintenance of the equipment and using vehicles and equipment that is in good condition. Contractor was also found to be practicing regular water spraying to control the dust in the local environment. However, the local vehicle movement may also be responsible for deteriorated air quality.

**From the testing of the contractor of Package 02 the following findings were revealed:**

For drinking water, 15 samples of drinking water were tested for parameters Arsenic, Iron, Chloride, Total and Fecal Coliform. It was observed from the test results that all the samples contain Arsenic, Iron and Chloride within permissible limits and none of the samples contained any total and fecal coliform.

For surface water, a total of 32 surface water samples were collected and tested for parameters like pH,



Electrical Conductivity (EC), Total Dissolved Solids (TDS), Turbidity, Dissolved Oxygen (DO) and Biological Oxygen Demand (BOD). Test results of all were found to be within permissible limits except BOD contents. Out of total 32 samples, 29 samples have higher BOD contents for fishery and 28 samples have higher BOD contents for irrigation purposes. This may happen because of seasonal variation (rainy season/dry season) and Contractor found not polluting any of the water sources samples by dumping wastes or wastewater).

For soil quality, a total of 20 samples of soil were tested by the Package-2 Contractor for analysis of pH, Organic matter, Electrical conductivity, Nitrogen content, Phosphorous content and Sulphur content. The soils have higher content of Organic matter, Sulphur and Nitrogen content in most cases and lower content of Phosphorous in all cases.

Air quality tests of 20 locations of 5 Polders of Package-2 were performed in Packages 02 areas. The parameters tested were PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub> and CO. According to the test results the Air Quality Index (AQI) Ratings are provided as following:

**Table 14: Summary of Air Quality in Package 02 areas**

Parameter	Air Quality Index (AQI) Ratings				Remarks
	Good (0-50)	Moderate (51-100)	Caution (101-150)	Unhealthy (151-200)	
PM <sub>10</sub>	16	4	-	-	
PM <sub>2.5</sub>	13	6	1	-	Cautious Level found in polder 40/2 at main camp, coordinates- N 22°01'00.0" E 89°58'10.4"
SO <sub>2</sub>	19	1	-	-	
NO <sub>x</sub>	7	7	5	1	Caution condition found: 1. Polder 40/2 at main camp (N 22°01'00.0" E 89°58'10.4") 2. FS4/1 Polder 40/2 (N 22°01'28.0" E 89°57'06.6") 3. DS2, Polder 40/2 (N 22°01'54.5" E 89°57'04.0") 4. Casting yard, Polder 40/2 (N 22°01'01.2" E 89°58'08.8") 5. Casting Yard, Polder 48 (N 21°51'20.1" E 90°05'51.2") Unhealthy condition found: 1. Residential area near FS-3, Polder 41/1 (N 22°09'33.6" E 90°12'34.9")
CO	20	-	-	-	

Note: For Unhealthy and Caution conditions, the air quality exceeds the permissible limits. For Good and Moderate conditions, the air quality is within permissible limits.

As for mitigation measures, the Contractor of Package 02 was also found to be continuing regular maintenance of the equipment and using vehicles as well equipment that are in good condition. The Contractor was also found to practice regular water spraying to control the dust in the local environment. However, the local vehicles movement may also be responsible for deteriorated air quality.

## 2.5. Staff awareness and training

The Package 01 Contractor has conducted a robust program of monthly environmental training during the January-December 2019 period. More than 9,500 participants (staff and workers) were trained, allowing for double-counting wherein one person may have been trained more than once as would be the case for refresher training or training in additional topics. Please see table below for the breakdown:

**Table 15: Number of Package 01 Participants (Staff and Workers) Receiving Environmental Training During 2019**

Polder No/ Place	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Total in 2019
32	311	211	212	288	269	195	96	70	53	28	82	90	1,905
33	290	312	345	345	341	341	436	50	46	46	161	51	2,764
35/1	411	406	406	401	399	385	73	50	51	51	136	46	2,815
35/3	201	199	199	199	150	150	123	70	51	123	41	15	1,521
Khulna	0	0	0	0	0	0	27	20	22	27	29	35	160
Nalian Closure	0	0	0	0	0	0	0	0	0	0	178	190	368
<b>Total</b>	<b>1213</b>	<b>1128</b>	<b>1162</b>	<b>1233</b>	<b>1159</b>	<b>1071</b>	<b>755</b>	<b>260</b>	<b>223</b>	<b>275</b>	<b>627</b>	<b>427</b>	<b>9,533</b>

Interviewing the Contractor 01 EHS staff revealed that, considering the minimal activities during the monsoon season, little training was conducted during July-September 2019.

The Package 02 Contractor has also conducted a robust program of monthly environmental training during the January-December 2019 period. More than 4,000 participants (staff and workers) were trained, allowing for double-counting wherein one person may have been trained more than once as would be the case for refresher training or training in additional topics. Please see table below for the breakdown:

**Table 16: Number of Package 02 Participants (Staff and Workers) Receiving Environmental Training During 2019**

Polder No/ Place	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Total in 2019
39/2C	200	160	210	120	180	80	96	72	80	120	30	92	1,440
40/2	60	80	55	76	50	30	12	10	30	40	50	41	534
41/1	70	90	100	95	80	20	10	17	50	70	30	58	690
43/2C	10	15	10	20	8	5	8	6	30	55	20	33	220
47/2	40	60	60	45	30	10	5	12	20	30	30	27	369
48	70	60	85	70	50	15	11	24	30	60	30	35	540
<b>Total</b>	<b>450</b>	<b>465</b>	<b>520</b>	<b>426</b>	<b>398</b>	<b>160</b>	<b>142</b>	<b>141</b>	<b>240</b>	<b>375</b>	<b>190</b>	<b>286</b>	<b>3,793</b>

The following major topics have been discussed during the training sessions.

- Environmental Management in the CEIP-1
- Environmental Health and Safety
- Environmental Monitoring
- Reporting

The Environmental Specialists of PMU, DDCS&PMSC and Third Party M&E team also provided on-the-job training during their combined/joint visits to work sites.

In all the training sessions, the following issues were discussed:

- The workers should use all required PPE like helmet, musk, hand gloves, safety boot, glass, visible jacket, life jacket (during crossing river) etc. The Contractor has to supply the PPE and workers have to use them for their safety.
- Conduct of regular tool box talk with the workers for enhancement of workers' awareness on EHS safety.
- Provision of safe water and supply of required medicine to be made by the Contractor for the use by the workers during work.
- Monitoring and recording of noise levels of high noise areas and provision of noise barriers and required locations.
- Introduction of rotational works for the workers of high of high noise area (especially in the CC block manufacturing yards) to limit the effect of high noise.
- Construction and maintenance of suitable secondary container (with minimum 110% capacity) for storage of hazardous fuel and chemical materials.
- Establishment of impervious/concrete pavement with collection sump/ditch at the refueling areas with spill kit/absorbent mat.
- Establishment of temporary industrial waste storage with impervious/concrete pavement at required work sites, especially at the CC block manufacturing plants.
- Take all required arrangement for traffic management including deployment of guard; maintaining separate facility for movement of fork lifters.
- Provision of signboards/signage at required location for provision of information and maintaining safety for workers, local population and avoiding of potential accident.

Improved practices were observed as a result of training both in Package 01 and Package 02 areas during the Audit (e.g. toolbox talk happens on EHS issues, use of PPE by the workers, waste management in place). Moreover, a few of the workers were in some sites were also interviewed to know their knowledge level on EHS issues and the interviews revealed that the knowledge level of the workers on EHS issues is good.

## 2.6. EMP Implementation Budget

As part of the implementation of EMP approximately BDT 6 crore (about \$750,000) is earmarked for each Package-01 and Package-02, though many more items for environmental monitoring and mitigation are included in Package-02. Expenditures are being incurred for:

- Emergency works for breach of embankment and damaged structures;
- Crop compensation to the direct loser, land owner/share croppers of construction site/damaged due to dredge spoils;
- Waste disposal arrangement at construction site;
- Water quality monitoring;
- Air and noise quality monitoring analysis;
- Soil and water salinity monitoring cost;
- Conservation and stocking of threatened fish species;
- Management of soil health by replacing back in agricultural land;
- Reducing erosion through proper compaction, turfing;
- Afforestation along the dyke side to reduce erosion and threat of climatic events.

For Package 01, the total expenditure for EMP cost so far paid is Tk. 54,100,000 out of a maximum budget of Tk. 60,200,000. This included cost of works consists of emergency breach closing, minor earthworks, compaction and positioning of geo-bags (175 kg) and other items of EMP components in various stages of utilization. For Package 02, the total paid cost for EMP implementation so far is Tk. 2,115,728.

## 2.7. Actual implementation/ practice level

### 2.7.1. Review of achievement status of Action Items from the Aide Memoires, status of compliance of the recommendations of Third Annual Environmental Audit of Third Party M&E Consultants and Bi-Annual Environmental Monitoring Report

The following tables represent the achievement status of specific action items raised in Aide Memories of World Bank missions, Third Annual Environmental Audit and Seventh Bi-Annual Environmental Monitoring Report during the audit period:

**Table 17: Status of implementation of action items of WB Aide Memoire (15-27 Oct 2019)**

SL	Actions	Agreed timeline as per October 15 to 27, 2019 Implementation Support Review Mission	Remarks
1	Prepare the draft EHS Risk Assessment for W-02.	Update on implementation Quarterly and Bi-Annually	Done
2	Complete revision of the draft C-ESMP incorporating comments from WB/C-ESMP monitoring (new action)	Update on implementation Quarterly and Bi-Annually	Done
3	Finalize ESIA reports for W-03	November 15, 2019.	Almost ready to share with WB
4	Increase the number of toilets in workplaces/construction areas to accommodate the increased number of workers.	November 1, 2019.	Done
5	Conduct regular Environmental sampling/testing for W-02	Include results of testing in the Monitoring Reports (15th of every month).	Done
6	Annual Environmental Audit Report-Action Plan	November 15, 2019	Done
7	Establish grievance collection box for workers at each CC blocks manufacturing plant	November 15, 2019	Increased but re-location needed in some sites.
8	Share the operational procedure of police as security guard especially on the use of firearms and interaction with local community	November 15, 2019	Done

**Table 18: Status of implementation of action items of WB Aide Memoire (28 Apr-09 May 2019)**

<b>SL</b>	<b>Actions</b>	<b>Agreed timeline as per April 28 to May 9, 2019 Implementation Support Review Mission</b>	<b>Remarks</b>
1	Share the meeting announcement and minutes of EHS committee monthly meeting	Every month	Was continued upto March, 2020
2	Continue regular EHS training sessions for contractor's management and EHS managers for Package 1	-	Being continued
3	Prepare the draft EHS Risk Assessment for the work Package W-02	May 31, 2019	Done
4	Complete the revision of the draft C-ESMs Incorporating the comments from WB	June 30, 2019	Done
5	Finalize EIA reports for Package W-03	July 31, 2019	Almost ready to share with WB
6	Review and revise compliance inspection checklist for Package W-01 and W-02 to ensure implementation of mitigation measures proposed in EHS Risk Assessment and identifications of non-compliance items.	June 30, 2019 (For Package 2)	Done
7	Conduct regular environmental sampling/testing for Package W-02	May 31, 2019	Done
8	Prepare and implement the safety procedures for Package W-02	May 31, 2019	Done
9	Discuss the recommendations of Annual Environmental Audit Report and prepare action plan	May 31, 2019	Done
10	Revision of Emergency Response plan to include the emergency procedures, evacuation route/place, clear definition of emergency situation.	June 30, 2019	Done
11	Establish grievance collection box for workers at each CC blocks manufacturing plant	June 30, 2019	Done
12	Share the operational procedure of police as security guard especially on the use of firearms and interaction with local community	July 31, 2019	Done

**Table 19: Status of implementation of action items of Third Annual Environmental Audit (Covering Jan-Dec 2018)**

SI	Proposed Actions	Status	Remarks
1	Contractors of both Packages should follow the findings and recommendations of this audit.	Being followed	Continuous
2	The DDCS&PMS Consultants and PMU should consider the recommendations for the upcoming Package 03 where applicable.	To be followed	New phase may cascade the learning
3	The audit report should be shared with the Contractors, Consultants, relevant sub-Consultants, and PMU staff.	Done	-
4	The EHS monitoring registers those have been maintained in the worksites should also track the compliance with their status with dates. Maintaining a table would be an effective tool to give an impression on compliance and non-compliance. It is also recommended that MPR of DDCS&PMS Consultant include the compliance and non-compliance status.	Done	Audit found this has been practiced and this need be continued
5	Most of the latrines being used by the workers at work site were found to be unhygienic, with no water seals and some of them found close to nearby water bodies. It is highly recommended that both the Contractors ensure hygienic latrines for the workers, ensure water seal with each of them and it should be also ensured that latrines are not installed within 10-meter range with nearby water bodies or drinking water sources.	Done	Still there is scope of further improvement as many of the latrines found not hygienic yet which is reflected in section of Polder-specific findings.
6	Along with other Polders, it is recommended that the Contractor of Package 02 concentrate on complying EHS issues at Polder 47/2 and 48 for which the audit found poor EHS practices.	Poor	Need to improve; The field visit conducted for this 4 <sup>th</sup> Audit found the EHS practices in Polder 47/2 and Polder 48 still poor and the detail of the practices are elaborated in section of Polder specific findings- findings of Polder 48 and 47/2 (Section 2.7.2) of this report.
7	Contractor of the Package 02 is recommended to prepare Polder wise monthly report on EHS training with dates, number of participants and name of topics and preserve the reports.	Done	-

SI	Proposed Actions	Status	Remarks
8	The Contractor 02 was found keeping good records on toolbox talk which has not been followed by the Contractor of Package 01. It is recommended that the Contractor of Package 01 follow this practice and they can also follow the simple format that has been adopted by the Contractor of Package 02.	Done	Both contractors are following this.
9	The Contractor of Package 02 should carry out the testing with defined frequencies for all the required environmental parameters and should preserve the testing results.	Done	Followed and should carry out every year
10	It is recommended that the Contractor of Package 02 carry out environmental monitoring by the Bi-monthly environmental inspection Checklist and submit the report to DDSC & PMS Consultants twice a month. This practice has been carried out by the Contractor of Package 01 regularly.	Done	Both the Contractors submitting the Bi-monthly environmental monitoring checklist (filled) as report twice in a month.
11	Contractor's EAPs and C-ESMPs should be improved continuously as those are living documents. The monitoring frequencies spelled out in the EAPs and C-ESMPs should be consistent with the monitoring frequencies defined with the CEIP-1's EMPs.	Not done	Both the contractors should revise the frequencies as per the EMPs
12	A Water Quality Assurance Plan (WQAP) for drinking water supplied for the workers should be developed and implemented which was also recommended by second Annual Environmental Audit. The WQAP plan will define the quality monitoring frequency, system and protocols with response in case of the water quality found not within applicable standards.	Done	
13	The team recommends that the environmental monitoring testing should be done by the both contractors for noise, air, water and soil by defining the sites to be followed by the same location over the project duration to see the impacts/ changes.	Done	Contractors are taking samples at the same locations that were provided by the DDSC&PMS Consultant (same locations for every year)
14	The twice-monthly inspection should cover all the types of works as it was observed to emphasize less on some of the sites like borrow pits, excavation and re-excavation of the canal.	Done	-
15	The practice of using PPE should be enhanced.	Improved	Package 02 should improve more

SI	Proposed Actions	Status	Remarks
16	The forklift and CC plant Safety Procedure Manual should be in place in the relevant worksites of Package 02. This practice has been adopted by the Contractor of Package 01.	Done	-
17	The PMU with the help of DDSC & PMSC need to identify the issues and stakeholders/ agencies need to take part to implement the EMP, enhance coordination and sign MoU with them.	Done	To be continued
18	Both contractors of CEIP-1 are recommended to arrange exchange visit for learning and scale up of practices for improvement environmental compliance in their Packages.	Done	Need another one in 2020
19	Some of the recommendations and findings of last year's audit still remain relevant and the audit recommends to follow those along with the findings of this audit.	Done	-

**Table 20: Status of implementation of action items of Bi-Annual Environmental Monitoring Report (Covering Jan-Jun 2019)**

SL	Proposed Actions	Status	Remarks
1	To conduct the environmental monitoring testing following PMU's guidance strictly	Done	Due in 2020 due to Covid-19 outbreak but started in Packages 1 and 2 from November, 2020
2	Assure the use of required PPE by the workers.	Improved	-
3	Package 01 Contractor should provide a note on type of accident/injury and measures taken.	Done	
4	Both Contractors to implement the action plan prepared on the basis of 3rd Environmental Audit report and routinely report on its implementation.	Done	
5	Both the contractor should conduct regular Environmental test from recognized laboratory with the frequencies as stipulated in EAP and C-ESMP	Followed	
6	Both the contractors should follow the test result of drinking water, surface water, soil quality, air quality and noise quality and take necessary action accordingly.	Followed	
7	Regular exchange visit of EHS team of Package-1 and 2 to be ensured for adopting good practices	Done in 2019	Due in 2020 due to Covid-19 outbreak.

## 2.7.2. Polder-specific field observations

### Package 01

#### Polder 32

The Audit Team audited the practice level of Environmental Management Plan (EMP) in main camp of Polder 32 and Nalian Closure Dam. Site-specific findings from the Polder 32 are mentioned below.

- In the main camp of the Contractor under Polder 32, the camp site found fenced well with necessary security arrangement and there were wall-mounted fire extinguishers (expired and should be replaced by new ones), emergency contact number on the wall of the camp and adequate water and sanitation facilities in place. Environmental Monitoring Register, English, Bengali and Chinese versions of EHS risk assessment and EAP (Environmental Action Plan) of Polder 32, noise monitoring record and accident register were in place. There was grievance box in the camp site. However, oil drums were found kept in front of the camp which has risk of causing soil/ground water contamination. It is recommended to keep the oil drums in designated and paved place. In the premises of the camp, the machinery and other equipment found kept in pen place; rather these should be kept in designated place rather keeping in open place. A few of the electric boards found kept open which should be closed. There were bins in the premises but there should be indication about which bin is for degradable and which is for non-degradable wastes.
- In Nalian closure Dam, there were safety signage, signboards, demarcation, first aid box, fire extinguisher in the work place. Drinking water supply for the workers found adequate and the toilet facility for the workers was also good. There was also a separate waste dumping area. From the discussion with the local people it was revealed that they are not disturbed significantly by the project activity. The contractor is taking proper measures for minimizing the impact from the project activities (e.g. spraying of water to control the dust in the community). During the audit, the workers were found doing welding work on a barge. The workers were not using required PPE (e.g. gloves, mask, goggles) though they were doing a risky job. Bamboos were stacked around the work site without demarcation and it is recommended to ensure demarcation for such stacks.

Moreover, the audit team met the Team Leader and Deputy Team Leader of Center for Natural Resources Studies (CNRS) to know about the social mobilization, Integrated Pest Management Plan (IPM) and afforestation activities in polder 32 and polder 33 areas. It was revealed that only Ad-hoc committees for Water Management Group (WMG) have been formed and the main committees have not been formed. It is crucial to form the WMGs as soon as possible to carry out the IPM and afforestation activities in sustainable manner along with operation of the sluices in efficient manner.

- **Polder 35/1**

In polder 35/1 areas, the audit team visited Drainage Sluice (DS) 04, Flushing Sluice (FS) 05, Tafalbari CC block manufacturing yard and afforestation around 3+000 km Chainage. Moreover, a meeting was held with NGO team (SHUSHILAN) and a group discussion was carried out by the audit team with WMG-17 (Sonatola Water Management Group). The findings from the visit are as follows:

- From the visit in DS04, it was found that the construction of the structure was completed at least six months earlier. But the structure is not functional and the previous structure has not been removed yet. Around both the new and old structures, there is waterlogging and water was spreading bad odor which was also found as source of vectors (e.g. mosquitoes) which may increase the risk of vector borne diseases in the community. The discussion with the local people revealed that their agriculture activities have been suffering a lot due to closing of the canals for long time. It is recommended that the WMG should be functional as soon as possible for the sustainable operation and maintenance of the structures. The polluted water (logged water) should be managed in an environmentally sound manner and it should be kept in mind that this water is not to be pumped out to nearby canals which will pollute the water that may disturb the aquatic biodiversity. The sluice should be decommissioned as soon as possible with proper management of the debris.
- From the visit of the FS05, it was found that the construction of the structure is completed and there is no water logging issue. But it was found that gravel/ broken stones are kept on the slope of the embankment nearby the sluice the river side. It is recommended that construction materials are not kept on such open place.

- The audit team also visited the Tafalbari CC block manufacturing yard. Team found many of the good and some bad EHS practices. Environmental Monitoring register (non-compliance register), accident/injury register, English, Bengali and Chinese versions of EHS risk assessment and EAP (Environmental Action Plan) of Polder 35/1, noise monitoring record and accident register were in place. At audited site, there were sufficient wall-mounted fire extinguishers, grievances/complaints box inside and at gate of the yard. There were first aid boxes with sufficient items, adequate supply of drinking water for the workers at the worksite. The latrines set with nearby the office of the yard found improved. During last visit, it was revealed that spillages from the latrines to the nearby ditch and it was recommended to make the tanks of the latrine sealed so that there is no spillage to stop pollution. The recommendation of the last audit was found to be addressed. The overall waste management practices at site were found good. Even the industrial waste found kept in designated place with proper demarcation. It was also found that machines and machineries are kept in designated place with proper demarcation and shed. The contractor found cultivating vegetables inside the yard which can be considered as enhancement measure. The fuel storage found with all the safety arrangement. There is proper demarcation with required signage, signboard and information at the worksite. However, the workshop areas found not organized well and the oil driven machinery found kept on unpaved ground in open space next to the workshop. Inside the workshop, there were also machinery with spillage of oil. The machinery should not be kept in unpaved and open space and it is also recommended to ensure proper management of oil spillage of the machinery at the workshop area. The forklift driver found not using required PPE (e.g. earplug) while driving the forklift. From the bathing corner to the south west part of the yard, the water from bathing directly dumped to the nearby ditch and the ditch is also connected to a pond. The pond is being used by the community for bathing purpose. To avoid contamination at that pond from the bathing corner, it is recommended to provision a soak pit with facility.
- A discussion meeting was held with Sonatola Water Management Group-17 (WMG-17) and the Social Afforestation Group. The following things came out from the discussion:

  - WMG and Social Afforestation group under the WMG were present at the meeting. The Integrated Pest Management (IPM) group under the WMG has not been formed yet.
  - There are 12 members in Sonatola Water Management Group and this group is responsible for four sluices (DS-10, FS-10, 12 and 13). It was revealed from the discussion that saltwater comes in the month of March and April. So, if the activities of the WMG can be started within the next 1 or 2 months, it will be good for our farming.

But it may take another 3 or 4 months for the WMG to be functional well. It is recommended that the WMG are well equipped with necessary training as soon as possible for the betterment of the communities.

- From the audit of the afforestation site, it was revealed that 6 km has been afforested and the afforestation group mentioned above are responsible for this section of the afforestation works. Forest department has appointed 6 caretakers (1 caretaker is reasonable for 1 km) to look after the planted saplings. The audit found that the growth of the plants is good and the species have been planted as per the afforestation plan of the CEIP-1 and no invasive or exotic species has been planted.

## Package 02

### Polder 39/2C

Under Polder 39/2C, the audit team visited the Contractor's Nadmula camp and Nadmula CC block manufacturing yard, DS10 and Charkhali CC block manufacturing yard 2. A meeting was held with NGO responsible for Polder 39/2C. The audit findings are as follows:

- In the Nadmula camp, the record keeping/ documentation of EHS issues found to be good. Updated C-ESMP, EHS risk assessment report, non-compliance register, accident register, records on toolbox talk, testing reports found at the camp office. There were adequate fire extinguishers at camp and CC block manufacturing yard premises. The waste management at camp also found sound (e.g. separate bins for degradable, non-degradable wastes). Demarcated assembly point for emergency situation also found at the camp premises. With the camp and CC block manufacturing yard, there were adequate signboards, safety signage. First aid box with adequate items, safe drinking water and hygienic toilet facilities found in place for the workers. For contacting in any emergency situation, contact numbers were also written on wall at the worksite. The store rooms found managed well. Grievance box found at the premises of the site. There were also designated sheds for industrial wastes with required safety measures. The fuel storage found in good condition with paved floor. There was adequate signage of the speed limit in the CC block yard. Inside the yard, the drainage system found to be good, but the drain from the workshop areas towards sluice found water logged which needs regular maintenance (e.g. cleaning, maintaining proper sloping). The drivers of the forklift found loading the Barge without using ear plugs though driving the forklift creates significant noise and there was no flagman to control the movement of the forklift. It is recommended that the forklift drivers will

use ear plugs and a flagman be in place to control the movement of the forklift. The laborers engaged in loading and unloading sands from the boat found not using any PPE (e.g. mask, gloves). All the laborers should also use required PPE.

- In DS10, there were first aid box and supply of safe drinking water for the workers, adequate safety signage, demarcation, and visibility of emergency contact number at the worksite. The workers found not using the adequate items of PPE (e.g. no safety boots and gloves). All the construction workers should use the required items of the PPE. Electric wires were found on the ground which should always be overhead. There were no bins for waste collection and it is recommended to ensure adequate numbers of bins at the worksite. The toilet being used by the workers found with no water seal and this creates bad odour and allows flies to be contact with faeces. It is strongly recommended that contract ensures water seals with all the toilets. There are HHs nearby the worksite and it is recommended to measure the noise level at nearest household (HH) when the works at worksite run and if the noise level is found higher than the standard, it is recommended to take proper mitigation measure (e.g. noise barrier) for the HH.
- From the visit at Charkhali CC block manufacturing yard 2, the Audit Team found adequate signboard, safety signage, demarcation, fire extinguisher, first aid box, safe drinking water, grievance box, hygienic toilet facilities (improved and provisioned with septic tank with the new toilets). The safety procedures of CC block operation also found at the premises. The wastes management system and fuel storage system found in sound manner. From the visit, it was revealed that the contractor should spray more water to control the dust at the worksite.
- From the discussion with NGO, it was revealed that their afforestation, WMG group formation and IPM activities have not been started in full swing yet.

### **Polder 41/1**

In Polder 41/1 areas, the Audit Team visited Burirchar camp of the Contractor, DS06, DS08, Gulbunia CC block manufacturing and stockyard. The team also met with the TL and DTL of responsible NGOs working in polder 41/1. Two separate group discussions were also held with the WMG#06 and WMG#12. The findings from the Polder 41/1 are mentioned below:

- At the Burirchar camp site of the Contractor, there was good documentation of the EHS records

and materials. There was proper demarcation, safety signage, wall-mounted fire extinguishers, and first aid box. The workers found using the required items of PPE. Waste management system at site found good. There were separate bins/place for collection of industrial, kitchen, other degradable and non-degradable wastes. The fuel storage system also found in good manner. However, the drainage system around the camp found water logged and this needs to be maintained (cleaning, maintain proper slopes towards the outlet etc.) regularly to avoid the water logging.

- The works of DS06 and DS08 were completed (except the fixing of gates) around 1 year back. But the canals have been stopped from operating for more than 1.5 years. There were no diversion/alternative canals and this has created problems like lack of availability of water for irrigation, water logging and risk of accelerating the growth of vectors (mosquitoes), lack of native fishes and aquatic species in the canals, etc. From the discussion with WMG #6 and the local people, it was also revealed that the farmers have been suffering in their agriculture. They were not able to do cultivate two seasons of paddy and one season of Rabi crops due to the stopped canals. Furthermore, the canal associated with DS08 is silted up and as long as the canal is not re-excavated, the sluice cannot be functional. It is recommended that the canal with DS08 is re-excavated as soon as possible and the gates of the DS06 and DS08 should be fixed as soon as possible and it should be ensured that the structures are functional as early as possible considering the situation.
- From the visit at Gulbunia, it was found that there are not any EHS related records/documents at the worksite. There was no demarcation, safety signage, signboard, fire extinguisher, first aid box, safe drinking water and hygienic toilet facilities for the workers. During the visit, the workers found making CC block manually and none of them found using any PPE. There were no bins for the collection of wastes, and wastes and debris found kept inside the yard randomly. There was traffic movement (e.g. forklift, truck) inside the yard and there was no flagman to manage the traffic movement. Oil drums found kept together with wood which is risky with respect to potential fire. There was no drainage system within the yard. Open latrine found being used by the workers and this is directly connected to the nearby river. The site is a critical one as it is on the bank of the river and to avoid the pollution to the river the open latrine should be stopped and a hygienic latrine for the workers should be ensured in place and located a minimum of 10 meters from the river. Further to this, a proper drainage system should be provisioned as soon as possible to avoid any kind of pollution to the nearby river. At the

worksite, all the EHS related records/documents, fire extinguishers, first aid box, safety drinking water should be ensured for the workers. All the workers should use all the required PPE items. A dedicated flagman should be ensured to manage the traffic at worksite. Proper demarcation and adequate signage and signboard should be ejected at the worksite. Proper management system should be ensured at the work sites for managing construction debris, industrial and other wastes.

- A group discussion was also held with Manikkhali Sonbunia Water Management Group. From the discussion it was revealed that there are 308 households (HHs), 200 ha catchment area, 1 sluice FS-15 and 1 Khal under this group. The participants opined that that the WMG needed be formed and functional fully as soon as possible. The gate should be opened by training them well. Otherwise, they will not be able to cultivate both Aus paddy and Rabi crops this season. The khal has been closed for one year for construction of gate work. They all said that before there were a lot of fish in this khal, but now fish are not available like before because the gate has been closed for a long time for the construction of sluice gate.

#### **Polder 48**

Under Polder 48, the audit team visited Alipur CC block manufacturing yard and contractor camp, DS01, DS06, DS2A, embankment work and the CC block manufacturing yard #3. Moreover, the team also met with the Team Leader of the NGOs responsible for the activities of social mobilization, afforestation and IPM activities in the polder 47/2 and polder 48. The audit findings are as follows:

- Audit team visited the Contractor's Alipur CC plant manufacturing yard and the camp. There were fire extinguishers, first aid box, grievance/complaints box at the worksite. The drinking water supply, sanitation and toilet facilitates for the workers found adequate. There was signboard but the safety signage at worksite found not adequate. The welding workers found using PPE but the workers who were manufacturing the CC blocks found not using required PPE (e.g. mask, gloves). It is recommended the Contractor ensure that all the required PPE are being used by the workers. There was water collection reservoir (a few concrete chambers) on the ground at the premises of the yard. But the surrounded place of the reservoir found water logged and which could be a good source for the vectors like mosquitoes. It is recommended to improve the place so that there is not any water logging. It was found that industrial waste is kept near the workshop, along with other waste. It is recommended to provision

separate/designated place for storing and dumping of different type of wastes. There is no flagman at the worksite and it is recommended to ensure a flagman at worksite. Empty cement bags were found kept on the bank of the river at the worksite and it is recommended to provision separate/designated place for storing the empty bags.

- DS01 under Polder 48 was visited. Construction of the structure was completed before. But the operation of the structure has not been started. From the visit, it was also observed that there is waterlogged condition with the structure as there is a ditch for the current arrangement with the structure. To avoid the environmental degradation (e.g. increased vector growth), it is recommended to pump out the logged water. From the discussion with community people, it was learned that they have been suffering as their canal has been closed for long time. Currently, they have been suffering waterlogging from rain in their agricultural field and given the waterlogged condition they cannot cultivate crops (e.g., kalai). The community people also recommended to make the structure operational as soon possible to reduce the negative impact on agriculture including environmental degradation (e.g. waterlogging, vector borne diseases).
- The audit team visited in DS06 worksite. The EHS practices at the worksite were found not to be good. There was no non-compliance register and other EHS related records/documentation. It is recommended to establish and maintain non-compliance register including other records/documents (e.g. noise level records, EHS assessment report, accident register, C-ESMP). There was no demarcation/ fencing and any of the safety signage at the worksite. During the visit, a child found on edge of the DS and for the lack of fencing and safety measure the child could be exposed to risk of major accident/injury. Proper demarcation, fencing and safety signage should be ensured at each of the worksites. Electric wires found on the ground which should be overhead. There was no drinking water and toilet facilities at worksite for the workers. Safe drinking water and hygienic toilet facilities should be ensured at each worksite. There was no fire extinguisher and first aid box at the worksite. Contractor should ensure fire extinguisher and first aid box in every work site. The workers found not using a single item of PPE. The contractor is advised to ensure that all the workers use all the required PPE at all worksites.
- From the visit at DS2A, it was observed that there is adequate toilet facility for the workers. But there was no drinking water for the workers and the Contractor should ensure safe drinking water for the workers. Among the workers, no one found using PPE. All the workers should use

all the required PPE. There was no record/document relating to EHS and the all the records/document relating to EHS should be kept on the worksite. There was no fire extinguisher, first aid box, demarcation, fencing, safety signage at the worksite; it is recommended the Contractor ensure all these at every worksite. The generator found kept on the bare ground at the worksite which should be on paved floor along with spillage management (e.g. oil absorption kits). Construction materials specifically the rods found kept in open place which should be kept in designated place. The electric wires found on the ground at the worksite. The contractor is recommended to ensure that electric wires are always overhead at each of the worksites.

- Embankment work was ongoing near the CC block manufacturing plant of the Kuakata beach. It was observed that no demarcation or necessary safety signage being used. It is recommended the Contractor ensure adequate safety signage and demarcation at all worksites.
- The CC block manufacturing yard 3 (Kuakata beach) was also visited. During the visit it was found that there was no production of CC block and the yard was being used as stacking yard. There was a hygienic toilet for the workers. The wastes are collected on the designated place and all them are send to Alipur site. It was observed that the activities at worksite is not causing any environmental degradation to the beach or sea.
- The Audit Team met with the Team Leader of the NGO responsible for polder 47/2 and Polder 48. From the discussion, it was understood that no WMG has been formed yet and no IPM or afforestation activities have been started. It is recommended to find out the root cause of the delay of the activities and expedite the activities as soon as possible for sustainable operation of the polders.

### 2.7.3. Observations on Long Term Monitoring, Research, and Analysis of Bangladesh Coastal Zone Consultants

**Comments in Chapter of Coastal Biodiversity:** A Review Report Prepared for Coastal Embankment Improvement Project, Phase-1 (CEIP-1)

The LTMRA Consultants have prepared an overview report based on the literature review on coastal biodiversity. This report covers giving overview on coastal zones dividing the whole coastal zones into four zones as Ganges Tidal Plain West (GTPW), Ganges Tidal Plain East (GTPE), Meghna Deltaic Plain (MDP) and Chittagong Coastal Plain (CCP). Audit recommends to add a section with the report by giving ideas how the biodiversity may be impacted in relation to the polder development.

**Polder Development Plan:** The activities of polder development plan should include study or polder specific EIA on the areas about environmental status, the environmental impacts/constraints/challenges may be evolved for polder development as well as the measures will be needed to be taken.

**Updated design and specification:** The updated design and specification works are in initial stage. The audit recommends that the updated design and specification consider the environmental aspects (e.g. fish migration issues in case sluices, considering the sea level rise, species for afforestation).

**Action Plan for capacity building activities:** It is recommended that the Environmental Specialist of the Consultants carry out on-job training for the personnel on how to address the environmental issues in their works.

**Coordination and collaboration:** It is recommended that Environmental Specialist of the Long Term Monitoring, Research and Analysis Bangladesh Coastal Zone Consultants maintain close coordination including updating about works with the Senior Environmental Specialist of PMU of CEIP-1 and also maintains good collaboration with Environmental Specialists of other Consultants (DDCS&PMS Consultants and 3rd Party M&E Consultants) of CEIP-1.

#### 2.7.4. Observations on NGO's Integrated Pest Management (IPM) and Integrated Crop Management Training

The training module of the Integrated Pest Management (IPM) and Integrated Crop Management (ICM) Plan of the NGO (Shushilan) was reviewed. From the perspective of the environmental safeguards, it lacked covering the EHS issues. The module covered preparation and use of some of the pesticides (botanical and others). Preparation of the pesticides may have some health risk if proper mitigation measures are not taken. There may be other issues like disposal of the pesticides related wastes, time of application, weather conditions and the direction of the spraying application etc. may have EHS related risks if proper measures are not taken. So, it is recommended that the training module and the trainings to be carried out should have discussion on the use of required PPE during preparation and application of the pesticides. Management of pesticides related waste in sound manner should be also discussed. It is also recommended that the proper weather conditions, proper time and wind direction to be followed in case of application of the pesticides should be discussed in training module and during the training. It is also recommended that above recommendations relating to the EHS issues for pesticides use should be discussed in IPM and ICM module and during the training of all the NGOs

#### 2.8. Labor influx

In most of the work sites and camp sites, there is a limited influx of labor. The laborers are predominantly from the vicinity and they prefer to return to their homes after finishing their works. In a few work sites, sleeping facilities have been put in place for a few laborers. They are reasonably furnished with cooking facility and toilets.

#### 2.9. Constraints to implement EMP

From the discussion with different staff of Contractors and DDSC&PMSC, one major constraint to implement the EMP is the habit of the workers not to practice the EHS. Traditionally they are not used to practice the EHS standards, so they seemed to be reluctant. But the practice level has been improving day by day by the awareness raising initiatives (e.g. training, on-the-job instructions, tool box talks etc.). Another constraint that was revealed by the audit is a smaller number of environmental personnel to supervise and monitor the EHS issues to be implemented by the contractors. In this situation, the International Environmental Specialists of DDSC&PMS Consultants have not been mobilized for long time. The National Environmental Specialists of DDSC&PMS Consultants and Third Party M&E

Consultants are working intermittently because of the limited allocation of man months.

The EMPs of the project outlined the institutional arrangement to implement the environmental mitigation measures. In line with that the EMPs suggested BWDB to coordinate with relevant stakeholders such as PAPs, BIWTA, WMOs, FD, DoF, DoE, DAE, BADC, SRDI, LGED, BEDC DC DLS, LGI and NGOs. Coordination with all the stakeholders and agencies should be done by the PMU, CEIP-1. To facilitate this coordination, the Project has its steering committee which consists of persons from different agencies. From the audit point of view, the coordination through the steering committee should be enhanced. Moreover, the EMPs also suggested for signing of MoU with agencies for sharing particular information and for implementing particular tasks specified in the EMPs. As of this audit period, an MoU has been signed with Bangladesh Forest Department for the implementation of CEIP-1's afforestation program. The Project has certain environmental issues which should involve DAE - e.g. for pesticide use by Project beneficiary farmers may be increased. DAE must promote the IPM program among farmers in the Project. There are fish migration issues with the Project activities and the DoF (Department of fisheries) could be involved with some tasks. The PAPs livelihood might be affected and project should think about livelihood restoration program and CEIP-1 also need to be concerned that livelihood restoration program should not be environmental unfriendly. So, the audit recommends the PMU with the help of DDSC & PMSC identify the issues and the relevant agencies/ stakeholders for EMP implementation and sign MoUs with them.

Considering the smaller number of EMP implementation budget items with the contract of Package 01, it is recommended that DDSC&PMSC monitor the implementation of mitigation measures for each impact area to ensure they are properly addressed. The M&E Consultants and PMU to continue to spot-check.

### 3. Conclusions and recommendations

The audit was conducted as per the TOR. It found some level of progress in environmental compliance implementation. It also found some areas which need to be improved. The audit recommends as follows:

1. Contractors of both Packages should follow the findings and recommendations of this audit.
2. The DDSC&PMS Consultants and PMU should consider the recommendations for the upcoming Package 03 or next phase of the project where applicable.

3. The audit report should be shared with the Contractors, Consultants, relevant sub-Consultants, and PMU staff.
4. Both the Contractors recommended to revise the EAPs and C-ESMPs considering the frequencies for environmental monitoring testing suggested in EMPs in their next revision.
5. The Contractors of both Package 01 and Package 02 must address the risks of air quality (e.g. emissions from plants, vehicle), and the environmental and health risk for poor drinking water and sanitation facilities with EHS Risk Assessment reports.
6. Considering the smaller number of EMP implementation budget items with the contract of Package 01, it is recommended that DDCS&PMSC monitor the implementation of mitigation measures for each impact area to ensure they are properly addressed. The M&E Consultants and PMU to continue to spot-check.
7. It is recommended that PMU with the assistance of DDCS&PMS Consultants and M&E Consultants incorporate an assessment of the environmental impacts of the completed works of Package 01 in the next Bi-Annual Environmental Monitoring Report.
8. It is recommended that PMU with the assistance of DDCS&PMS Consultants and M&E Consultants conduct a supervision for ongoing works to evaluate whether it is following environmental good practice and health and safety measures are in place. In case of any gap identified, the contractor needs to prepare a retrofit action plan and continue with monitoring.
9. It is recommended that the DDCS&PMS Consultants will include how EMP compliance will be monitored and achieved with their Quality Assurance Plan.
10. As the compliance level for the Decommissioning of Temporary Facilities and Hard Rock Pavement it is recommended that the Package 01 Contractor will ensure necessary efforts to improve the compliance level.
11. To improve the unhygienic conditions of the toilets of Contracts of Package 01 and Package 02, it is recommended to ensure soak pit/ septic tanks with all constructed toilets, regular cleanliness and maintenance of the toilets, water seal with all toilets, supply of sufficient water and soap inside the toilets. Moreover, sensitizing the workers regularly on hygienic practices should be also carried out.

12. Both the Contractors are recommended to follow the Environmental Social Response Tool (ESRIT) kit as it is not being followed.
13. The practice of using PPE should be enhanced.
14. Both of the Contractors of CEIP-1 are recommended to arrange exchange visit for learning and scale up of practices for improvement environmental compliance in their packages in the current year.
15. Both the Contractors are recommended to carry out environmental monitoring testing as per the schedule every year.
16. Audit recommends that both Contractors follow proper record keeping of EHS practices
17. Both the Contractors should carry out the efforts to improve the EHS practices.
18. As the EHS practices in Package 02 (other than those in Polder 39/2C) are found to be poor, the Contractor of Package-02 should give continuous effective efforts to improve the EHS practices.
19. Alternative/ diversion canal should be ensured in case of construction of sluices rather stopping the water flow to reduce environmental stress and people's sufferings.
20. It is recommended to fix the gates of the completed sluices and WMGs should be formed and functional to reduce the environmental stress and people sufferings in their agriculture.
21. The audit recommends that Long Term Monitoring, Research, and Analysis of Bangladesh Coastal Zone Consultants add section with the report by giving ideas how biodiversity/ecology and environment may be impacted in relation to the polder development activities.
22. The activity of polder development plan of Long Term Monitoring, Research, and Analysis of Bangladesh Coastal Zone Consultants is suggested to include study or polder specific EIA on the areas about environmental status, the environmental impacts/constraints/ challenges may be evolved for polder development as well as the measures will be needed to be taken.
23. The audit recommends that the updated design and specification Long Term Monitoring, Research, and Analysis of Bangladesh Coastal Zone Consultants to consider the environmental aspects.

24. It is recommended that Environmental Specialist of the Long Term Monitoring, Research and Analysis Bangladesh Coastal Zone Consultants works by maintaining close coordination including updating about works with the Senior Environmental Specialist of PMU of CEIP-1 and also maintains good collaboration with Environmental Specialists of other Consultants (DDCS&PMS Consultants and 3rd Party M&E Consultants) of CEIP-1.
25. It is recommended that the training module and the trainings to be carried out by the NGOs should have discussion on the use of required PPE during preparation and application of the pesticides. Management of pesticides related waste in sound manner should be also discussed. It is also recommended that the proper weather conditions, proper time and wind direction to be followed in case of application of the pesticides should be discussed in training module and during the training. It is also recommended that above recommendations relating to the EHS issues for pesticides use should be discussed in IPM and ICM module and during the training of all the NGOs.
26. It is recommended that the IPM activities of the NGOs' involve the local level GoB DAE Officers.
27. Integration and coordination of key agencies who have a role in CEIP-1, even if not funded by the Project, must proceed. Examples are DOF, DAE and others. MOUs may be needed as has been done with the Department of Forestry.
28. Public awareness of the GRM mechanism must be enhanced as the number of grievances seems to have fallen to negligible levels in the one-year period covered by this audit. In Package 01 which is advanced, this could be possible but still unlikely. In Package 02, we would expect issues to come up as the project works are in a relatively early stage.

Along with the above recommendations, both the Contractors are advised to follow the Polder-Specific recommendations those came out from the Audit. The Polder-Specific recommendations are as follows:

## Package 01

### Polder 32

The recommendations from the Audit at Nalian Closure Dam:

- I. It is recommended to keep the oil drums in designated and paved place. The machinery and other should be kept in designated place rather keeping in open place.
- II. The electric boards should be kept close.
- III. There should be indication about which bin is for degradable and which is for non-degradable wastes.
- IV. The workers work in the barge should use all the required PPE.
- V. It is crucial to form the WMGs as soon as possible to carry out the IPM and afforestation activities in sustainable manner along with operation of the sluices in efficient manner.

### Polder 35/1

Recommendations from the Audit at DS04:

- I. It is recommended that the WMG should be functional as soon as possible for the sustainable operation and maintenance of the structures.
- II. The polluted water (logged water) should be managed in an environmentally sound manner and it should be kept in mind that this water is not to be pumped out to nearby canals which will pollute the water that may disturb the aquatic biodiversity.
- III. The older sluice should be decommissioned as soon as possible with proper management of the debris.

Recommendations from the Audit at FS05:

- I. It is recommended that construction materials are not kept on open place.

Recommendations from the Audit at Tafalbari CC block manufacturing yard:

- I. The machinery should not be kept in unpaved and open space and it is recommended to ensure proper management of oil spillage of the machinery at the workshop area.
- II. The forklift driver should use PPE (e.g. earplug).
- III. To avoid contamination at the nearby pond from the bathing corner, it is recommended to provision a soak pit with bathing facility.

Recommendations from the meeting with Sonatola Water Management Group-17 (WMG-17) and the Social Afforestation Group:

- I. It is recommended that the WMG are well equipped with necessary training as soon as possible for the betterment of the communities.

## Package 02

### Polder 39/2C

Recommendations from the Audit at Nadmula Camp:

- I. The drain from the workshop areas towards sluice needs regular maintenance (e.g. cleaning, maintaining proper sloping)
- II. It is recommended that the forklift drivers will use ear plugs and a flagman be in place to control the movement of the forklift.
- III. The laborers engaged in loading and unloading sands from the boat should use required PPE (e.g. mask, gloves).

Recommendations from the Audit at DS10:

- I. All the construction workers should use the required items of the PPE.
- II. Electric wires should not be on the ground which should always be overhead.
- III. It is recommended to ensure adequate numbers of bins at the worksite.
- IV. It is strongly recommended that contract ensures water seals with all the toilets.
- V. There are HHs nearby the worksite and it is recommended to measure the noise level at nearest household (HH) when the works at worksite run and if the noise level is found higher than the standard, it is recommended to take proper mitigation measure (e.g. noise barrier) for the HH.

Recommendations from the Audit at Charkhali CC block manufacturing yard 2:

- I. It is recommended that the contractor should spray more water to control the dust at the worksite.

## **Polder 41/1**

Recommendations from the Audit at the Burirchar camp site of the Contractor:

- I. The drainage system around the camp found water logged and this needs to be maintained (cleaning, maintain proper slopes towards the outlet etc.) regularly to avoid the water logging.

Recommendations from the Audit at the completed DS06 and DS08:

- I. It is recommended that the canal with DS08 is re-excavated as soon as possible and the gates of the DS06 and DS08 should be fixed as soon as possible and it should be ensured that the structures are functional as early as possible considering the situation.

Recommendations from the Audit at the Gulbunia CC block manufacturing and stockyard:

- I. The site is a critical one as it is on the bank of the river and to avoid the pollution to the river the open latrine should be stopped and a hygienic latrine for the workers should be ensured in place and located a minimum of 10 meters from the river.
- II. A proper drainage system should be provisioned as soon as possible to avoid any kind of pollution to the nearby river.
- III. At the worksite, all the EHS related records/documents, fire extinguishers, first aid box, safety drinking water should be ensured for the workers.
- IV. All the workers should use all the required PPE items.
- V. A dedicated flagman should be ensured to manage the traffic at worksite.
- VI. Proper demarcation and adequate signage and signboard should be ejected at the worksite.
- VII. Proper management system should be ensured at the work sites for managing construction debris, industrial and other wastes.

Recommendations from the meeting with Manikkhali Sonbunia Water Management Group:

- I. The participants opined that that the WMG needed be formed and functional fully as soon as possible.
- II. The gate should be opened by training them well.

## **Polder 48**

Recommendations from the Audit at Contractor's Alipur CC plant manufacturing yard and the camp:

It is recommended the Contractor ensure that all the required PPE are being used by the workers.

- I. It is recommended to improve the water reservoir areas so that there is not any water logging.
- II. It is recommended to provision separate/designated place for storing and dumping of different type of wastes.
- III. It is recommended to provision separate/designated place for storing the empty bags.

Recommendations from the Audit at completed DS01:

- I. To avoid the environmental degradation (e.g. increased vector growth), it is recommended to pump out the logged water.
- II. It is recommended to make the structure operational as soon possible to reduce the negative impact on agriculture including environmental degradation (e.g. waterlogging, vector borne diseases).

Recommendations from the Audit at completed DS06:

- I. Proper demarcation, fencing and safety signage should be ensured at each of the worksites.
- II. Electric wires should be overhead.
- III. Safe drinking water and hygienic toilet facilities should be ensured at each worksite.
- IV. Contractor should ensure fire extinguisher and first aid box in every worksites.
- V. The contractor is advised to ensure that all the workers use all the required PPE at all worksites.

Recommendations from the Audit at completed DS2A:

- I. Contractor should ensure safe drinking water for the workers.
- II. All the workers should use all the required PPE.
- III. All the records/ document relating to EHS should be kept on the worksite.
- IV. It is recommended the Contractor ensure fire extinguisher, first aid box, demarcation, fencing, safety signage at every worksite.
- V. The generator should be on paved floor along with spillage management (e.g. oil absorption kits).
- VI. Construction materials specifically the rods should be kept in designated place.
- VII. The contractor is recommended to ensure that electric wires are always overhead at each of the worksites.

Recommendations from the Audit at Embankment work ongoing near the CC block manufacturing plant of the Kuakata beach:

- I. It is recommended the Contractor ensure adequate safety signage and demarcation at all worksites.

Recommendations from the meeting with Team Leader of the NGO responsible for polder 47/2 and Polder 48:

- I. It is recommended to find out the root cause of the delay of the activities and expedite the activities as soon as possible for sustainable operation of the polders.

## 4. Annexes

### 4.1. Terms of Reference

#### Fourth Annual Environmental Audit of CEIP-1 Project

##### Background:

The Coastal Embankment Improvement Project – Phase 1 (CEIP-1) is a 7-year \$400 million project being implemented by the Bangladesh Water Development Board in partnership with the World Bank and the Pilot Programme for Climate Resilience of the Climate Investment Fund. The Project started in 2013 and will close in 2020. It covers 17 polders in three Packages of 4, 6 and 7 polders respectively. The Detailed Design and Construction Supervision Consultants (DDCS&PMSC) commenced their design work for the first of three Packages in January 2015 and the Package 01 Contractor commenced services on 26 January 2016. The Package 02 Contractor's contract was signed on March 2017 and work was commenced on 12 July 2017. Moreover, contract signing between Bangladesh Water Development Board (BWDB) and the Non-Governmental Organizations (NGOs) for the consultancy services of social mobilization, afforestation and Integrated Pest Management Plan (IPM) was started from 24 February 2019 and CEIP-1 accomplished contract signing of five NGOs by 02 May 2019, and the NGOs have been providing their services. Contract between BWDB and the Consultants for long term monitoring, research and analysis of Bangladesh coastal zone was signed on 04 October 2018 which was effective from 15 October 2018 and the Inception Report was due on 15 January 2019. The Third Party M&E Consultants joined the project on 01 November 2015. After working with CEIP-1 for about one year, the Third Party M&E Consultants carried out the first Annual Environmental Audit during 01 January- 06 February 2017 covering the reporting period January through December 2016 and second Annual Environmental Audit covering January- December 2017 was carried out during 10 January- 07 February 2018. Hence, third Annual Environmental Audit covering January- December 2018 was carried out during 06 January- 07 February 2019. This TOR is for the fourth Annual Environmental Audit covering the period January – December 2019, due to commence about second week of January 2020.

Institutional arrangements of CEIP-1 for safeguarding the environment include:

1. Project Management Unit, with its Social and Environmental Coordination Unit, who are responsible for oversight and guidance on environmental matters as well as coordination with GoB agencies. PMU also reports to BWDB, the Project Steering Committee (PSC) and the World Bank.
2. DDCS&PMS Consultants who are responsible for developing the EIAs and EMPs consistent with World Bank and GoB guidelines and ensuring the EMPs are implemented satisfactorily. These Consultants review and approve the Contractor's EAPs and monitor their implementation on an ongoing basis. The DDCS&PMS Consultants develop the bidding documents and make sure that the Contract and its specifications include the necessary clauses and elements governing environmental safeguards.

3. The Consultants for long term monitoring, research and analysis of Bangladesh coastal zone also need to consider the environmental safeguards and sustainability issues in their polder development plan, updated design and specifications and action plan for capacity building activities.
4. The NGOs are responsible for the social mobilization works for the sustainable operation of the polders, social afforestation and IPM interventions.
5. Civil Works Contractors who must develop and implement polder- and site-specific Environmental Action Plans in the case of Package 01 and Contractor Environmental and Social Management Plans known as C-ESMP in the case of Package 02.
6. World Bank reviews and provides comments and no objection to the various safeguard documents.
7. Community participation, consultation and feedback through the EIA process and Grievance Redress Mechanism.
8. Third Party M&E Consultants who perform environmental audits and monitor and evaluate the project overall. Specifically, with respect to environmental safeguards, the M&E Consultants review and comment on environmental documents prepared under CEIP, spot check compliance, report their findings and prepare recommendations. The M&E Consultants report to the PSC and their contract is administered by the Project Director.

Each polder has its own EIA which includes an EMP which is meant to ensure that the environmental and social management practices are integrated in the design, construction, operation and maintenance of the polder.

Among others, the specific objectives of the EIA are to:

- Comply with national regulatory and WB policy framework (further discussed later on in the document),
- Determine and describe the existing environmental and social setting of the Project Area (the project area defined as is defined as the entire area inside the polder, project influence area outside the polder i.e. the embankment, borrow pits and spoil disposal are if located outside the polder and access route to the polder),
- Identify and assess the potential environmental and social impacts of the project, including health and safety issues,
- Identify mitigation measures to minimize the negative impacts and enhancement measures to enhance the positive impacts; and
- Detail an Environmental Monitoring Plan which also defines mitigation measures.

As is the case for the EIAs and EMPs, each polder is also to have an Environmental Action Plan (EAP) for Package 1 and Contractor Environmental and Social Management Plan (C-ESMP) for Package 2 which is prepared by the Contractors. The EAP of Package 1 and C-ESMP of Package 2 are to operationalize the EMP for which the Contractor is responsible. These Plans detail in a site-specific manner the mitigation and environmental compliance requirements and provide a monitoring plan outlining the protocols, frequency of monitoring, person(s) responsible, etc.

#### **Audit Objective:**

The overall objective of the fourth Annual Environmental Audit of CEIP-1 is to assess the extent to which these Plans for safeguarding the environment are in place and their adequacy with respect to coverage and content, the extent to which they are being implemented and whether they are effective considering the institutional and contractual arrangements applicable to the Project.

#### **Scope of the Audit:**

In summary, the audit will examine: (1) the status of preparation of required safeguards documents; (2) whether the systems, tools and protocols are in place for effective environmental monitoring; (3) institutional arrangements, staff and funding resources; and (4) compliance with WB safeguards, including consultation, communication, grievance mechanisms and disclosure, and country legal framework.

The audit will cover the Contractors for Package 01 and Package 02, the DDCS&PMSC, NGOs, Consultants of long term monitoring, research and analysis of Bangladesh coastal zone and Project Management Unit (Social and Environmental Coordination Unit).

Field work will be centered on the polders of Package 01 and Package 02, but the audit will examine CEIP-1 overall whenever appropriate. It will be forward-looking to draw lessons and make recommendations on areas of improvement for Package 01 and Package 02 which will also give guidance for broader application to similar projects or future phase of CEIP.

Specifically, the audit will assess:

- Status of EMP and EAP/C-ESMP implementation
- Status of implementation of the recommendations/ findings of the third Annual Environmental Audit that was conducted by Third Party M&E Consultants
- Status of the implementation of the recommendations/ agreed actions of the WB environmental missions of May 2019 and October 2019.
- Status of the implementation of the recommendations/ agreed actions of Bi-Annual Environmental Monitoring Report of July 2019
- Status of the implementation of the environmental safeguards measures for the social mobilization, afforestation and IPM activities of the NGOs

- Status of extent of the environmental safeguards and sustainability issues in the polder development plan, updated design and specifications and action plan for capacity building activities of the consultants of long term monitoring, research and analysis of Bangladesh coastal zone
- Whether the project involves labor influx and the sufficiency of mitigating measures. The rapid migration to and settlement of workers and followers in the project area is called labor influx, and under certain conditions, it can affect project areas negatively in terms of public infrastructure, utilities, housing, sustainable resource management and social dynamics
- Extent to which the Environmental Monitoring Plans and environmental mitigation measures outlined in the EIAs are being followed and whether they are effective
- Existence and quality of monitoring tools, formats and protocols
- Processes and procedures for compliance monitoring
- Degree to which qualified staff resources are in place
- Necessary environmental testing equipment is in place or hired when needed
- Staff awareness and training
- Identify constraints if any in ensuring compliance to the measures outlined in the EMP
- Review the GRM functioning in the polder areas and check and analyse the Grievances related to environmental safeguards in the polder areas
- Review the accidents records in the work sites and examine the magnitude of the accidents and how those were addressed by the contractor
- Look forward to anticipating either any of the CEIP-1 activities may have negative impact or not have on the mangrove forest Sundarbans.

The Environmental Audit will present findings and observations followed by a section on conclusions and recommendations aimed at improving the effective implementation of environmental safeguards. It will aim to identify not only direct causes of any issues, but also the root causes.

The Environmental Audit will examine documents and lab test results records, undertake field observation on compliance status and require field staff to demonstrate their knowledge of Environmental Measurements of soil, water, salinity, biological, physical, and chemical sampling techniques. Also, reliability of any lab testing will be carried out randomly. The Contractor and DDCS&PMS Consultants, long term monitoring consultant and NGOs will be informed of the scope of the Environmental Audit in advance but will not be informed in advance as to which particular work sites

will be visited. Both Contractor staff capability and Construction Supervision team staff capability in the area of environmental safeguards will be assessed.

### **Methodology:**

The M&E Consultants will undertake a review of documents, reports, site records and lab results, conduct interviews in offices and in the field, and make direct observations during one to two weeks period and then write up their findings. Specific work sites to be visited on a given polder will be selected randomly without advance notice to the Contractor, DDSC&PMSC and NGOs.

**Document Review:** Existing base documents or reports will be reviewed such as the Environmental and Social Management Framework, EIAs, EMPs, Contractor EAPs and ESMP, works contract, consultant contract, guidelines, standard procedure manuals, etc. World Bank Aide Memoires corresponding to the period will also be reviewed with respect to environmental aspects.

The Monthly Progress Reports and Bi-Annual Environmental Monitoring Report will also be reviewed. Contracts' bi-monthly environmental inspection checklists corresponding to the period will also be reviewed.

**Key Informant Interviews:** PMU, DDSC&PMSC, long term monitoring consultants, NGOs, Contractor staff and beneficiaries will be interviewed. Perspectives of communities living near the works, workers, and others will be obtained on how well the project is implementing EMPs.

**Site Records:** Test results for air quality, water quality, soil quality, pH, salinity, etc. will be reviewed. Non-compliance report logs, NCR clearance records and procedures will be examined.

**Direct observation:** Level of compliance with the EMP/EAP/ESMP and practices of project and Contractor staff will be observed in the field. Demonstration of water and soil quality, pH, salinity, biological, chemical and physical sampling technique, etc. by Contractor staff may be requested to observe the level of skill and knowledge and whether the technique is appropriate.

Three to four embankment construction worksites and 3-4 drainage/flushing sluice gate sites per polder sites and 2-3 of the CC block manufacturing sites, a few afforestation sites and IPM training (if continue)1 to Water Management Group (WMG) per Package will be visited to examine field level application of the environmental safeguards on a random sampling basis. The team will also visit the campsites, site offices and main offices of both Contractor and DDSC&PMSC to discuss systems, strength of the environment staff and documents.

### **Team Composition and Duration:**

The audit will be accomplished by the Environmental Team Environmental Specialist–National (A.K.M. Rezaul Haque Khan) of the Third Party M&E Consultants with the support of the Team Leader (Mr. Jan T. Twarowski), Deputy Team Leader (Md. Mahidur Rahman Khan) and M&E Officer (Md. Safiqul Islam). The audit will be conducted within a short timeline through fieldwork for one to two weeks in Package 01 and 02 polder areas and several days of meetings and document/file reviews in Dhaka, followed by a couple of weeks of report writing in Dhaka.

## 4.2. Field visit plan for the audit

Field visit plan for 4<sup>th</sup> Annual Environmental Audit  
3<sup>rd</sup> Party M&E Consultants  
CEIP-1

Team members of the Field Visit: A. K.M. Rezaul Haque Khan (National ES)  
Md. Safiqul Islam (M&E Officer)

SI	Activity	Time	Date	Remarks
1	Travel from Dhaka to Khulna	Morning flight	<b>05-01-2020</b>	
2	Meet with XEN, DDCS&PMSC, Contractor-01 and NGOs Khulna office team	11:00 am-11:30 am	05-01-2020	NGOs will be requested to share relevant documents
3	Travel from Khulna and audit the activities in <b>Polder 32</b> areas	11:30 am -07:00 pm	05-01-2020	Audit contractor's and NGOs works (Afforestation, IPM and WMG) Night Stay in Khulna
4	Travel from Khulna and audit the activities in <b>Polder 35/1</b> areas	08:00 am-6:00 pm	<b>06-01-2020</b>	Audit contractor's and NGOs works (Afforestation, IPM and WMG) Night Stay in Khulna
5	Review environmental records/ documents of Contractor 01	7:00 -08:00 pm	06-01-2020	At office of contractor 1
6	Travel from Khulna to <b>Package 02</b> areas and audit the activities in <b>Polder 48</b> areas	07:30 am-6:00 pm	<b>07-01-2020</b>	Audit contractor's and NGOs works (Afforestation, IPM and WMG) Night Stay in Kuakata
7	Travel from polder 48 and audit the activities in <b>Polder 41/1</b> areas	08:00 am- 06:00 pm	<b>08-01-2020</b>	Audit contractor's and NGOs works (Afforestation, IPM and WMG) Night Stay in Barguna
8	Travel from Barguna to <b>Polder 39/2C</b>	07:30 -9:30 am	<b>09-01-2020</b>	
9	Meet with DDCS&PMSC and Contractor-02 office team and review related records/ documents	9:30 -10:00 am	09-01-2020	Contractor's/NGO's works
10	Travel and audit the activities in <b>Polder 39/2C</b> areas	10:00 -11:30 am	09-01-2020	
11	Travel back to Dhaka from Barisal Airport	Afternoon flight	09-01-2020	<b>Team returns to Dhaka</b>

### 4.3. Some of the persons met during the audit

SI	Name	Position	Organization	Location	Cell Number
1	Md. Amir Faisal	Senior Environmental Specialist	BWDB	Dhaka	01715315227
2	Mr. Asraful Alam	XEN	BWDB	Khulna	01732435998
3	Dr. Md. Towhidul Islam	ES (Field)	BWDB	Khulna	01911493918
4	Engr. A.K.M. Sayeed Uddin	DRE	DDCS&PMS	Khulna	01919432163
5	Abu Bakr Siddique	Environmental Specialist	DDCS&PMS	Dhaka	01795095607
6	Dr. Ranjit Galappatti	Team Leader	Long Term Monitoring, Research and Analysis Consultants	Dhaka	01778559012
7	Dr. S.M.A. Rashid	Environmentalist	Long Term Monitoring, Research and Analysis Consultants	Dhaka	01717318906
8	Mr. Saiful Islam	CSE	DDCS&PMS	Polder-32	01727332986
9	Mr. Monzurul Ahashan	Team Leader	CNRS (NGO)	Polder-32&33	01718031860
10	Mr. Ren Gaofei	EHS in charge	CHWE Contractor	Khulna	01771894869
11	Mr. Taj	HSE Officer	CHWE Contractor	Khulna	01937231284
12	Mr. Whu	Manager	CHWE Contractor	Kamarkhola	
13	Mr. Rasel Ahmed	EHS Officer	CHWE Contractor	Kamarkhola	01708082679
14	Mr. Prodip Sana	EHS Officer	CHWE Contractor	Nalian Closure Dam	01911291165
15	Md. Sajib Ahmed	Field Engineer	DDCS	Polder-32	01736304050
16	Mr. Jia Kai	QC & HSE In Charge	CHWE Contractor	Tafalbari	01767189567
17	Mr. Li Bo	QC Engineer	CHWE Contractor	Tafalbari	01643727853
18	Mr. Rana	Local EHS Officer	CHWE Contractor	Tafalbari	01650163158
19	Mr. Mostafa Aktheruzzaman	Team Leader	Shushilan (NGO)	Polder-35/1&35/3	01854802400
20	Sherina Akhter	Deputy Team Leader	Shushilan (NGO)	Polder-35/1 &35/3	01714808048
21	Mr. Babujit Halder	Project Assistant	Shushilan (NGO)	Polder-35/1&35/3	01759298843
22	Mr. Suprakash Das	D-CO	Shushilan (NGO)	Polder-35/1	01909468557

23	Mr. Humayun Kabir	CO	Shushilan (NGO)	Polder-35/1	01993863054
24	Mr. Biplob Mondal	CO	Shushilan (NGO)	Polder-35/1	01938122826
25	A.K.M. Mazibur Rahman	CSE	DPM	Polder-43/2C, 47/2 & 48	01712948147
26	Mr. Zhang Cheng	Polder Manager	CICO Contractor	Polder-48	01643710631
27	Mr. Emon	Translator	CICO Contractor	Polder-48	01939648808
28	Mr. Ruhul Amin	Deputy Team Leader	JV AMS, AID & PDI (NGOs)	Polder-43/2C, 47/2 & 48	01720468982
29	Mr. Monirul Islam	Field Engineer	DDCS	Polder- 48	01775593224
30	Mr. Yang Dang	Polder Manager	CICO Contractor	Polder-41/1	01732963256
31	Mr. Azhar	EHS Officer	CICO Contractor	Polder-41/1	01797181079
32	Mr. Mustafa Bakuluzzaman	Team Leader	Shushilan (NGO)	Polder-40/2&41/1	01720505710
33	Mr. Shahin Islam	Deputy Team Leader	Shushilan (NGO)	Polder-40/2&41/1	01815309462
34	Md. Sadequl Islam	CSE	DDSC & PMSC	Polder 39/2C	01706947667
35	Mr. Ma Zemou	Polder Manager	CICO Contractor	Polder-39/2C	01887707644
35	Mr. Taher	Local EHS Officer	CICO Contractor	Polder-39/2C	01712003561
36	Mr. Mohammadullah	Translator	CICO Contractor	Polder-39/2C	01937063229
37	Mr. Nil Ratan Das	Team Leader	JV RIC & SSUS (NGOs)	Polder-39/2C	01712716276
38	Md. Rafiqul Islam	SFS	JV RIC & SSUS (NGOs)	Polder-39/2C	01552471737

## 4.4. Renewed/ issued ECC of Package 01 and Package 02

শেখ হাসিনার বাংলাদেশ  
পরিষ্কৃত্ত পরিবেশ

Government of the People's Republic of Bangladesh  
**Department of Environment**  
Head Office, Paribesh Bhaban  
E-16 Agargaon, Dhaka-1207  
www.doe.gov.bd

Memo No: DoE/Clearance/5196/2013/11

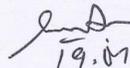
Date: 19/01/2020

**Subject: Renewal of Environmental Clearance Certificate for Polders-32, 33, 35/1 & 35/3 at Khulna Division under Package-1 and Polders-39/2C, 40/2, 41/1, 43/2C, 47/2 & 48 at Barishal Division Under Package-2 of Coastal Embankment Improvement Project, Phase-1 (CEIP-1), Bangladesh Water Development Board.**

Ref: Your Application dated 28/10/2019 and 22/12/2019.

With reference to the above, the Department of Environment has decided to renew the Environmental Clearance Certificate in favor of Polders-32, 33, 35/1 & 35/3 at Khulna Division under Package-1 and Polders-39/2C, 40/2, 41/1, 43/2C, 47/2 & 48 at Barishal Division Under Package-2 of Coastal Embankment Improvement Project, Phase-1 (CEIP-1) subject to fulfilling the following terms and conditions.

- I. The terms and conditions as stated in the Environmental Clearance Certificate issued on 05.11.2018 vide DoE/Clearance/5196/2013/1035 shall remain valid for the renewed period.
- II. This renewal is valid upto 04.11.2020. Application for further renewal along with the renewal fee and Vat on renewal fee in separate Treasury Chalan shall have to be submitted to the Director General, Department of Environment, Head Office, Dhaka with a copy to concerned divisional office at least 30 days before the expiry.

  
19.01.2020

(Syed Nazmul Ahsan)  
Director (Environmental Clearance)  
Phone # 8181673

**Chief Engineer & Project Director**  
Coastal Embankment Improvement Project, Phase-1 (CEIP-1)  
Bangladesh Water Development Board (BWDB)  
House-15, Road-24  
Gulshan-2, Dhaka.

**Copy Forwarded to :**

- 1) PS to the Secretary, Ministry of Environment, Forest and Climate change, Bangladesh Secretariat, Dhaka.
- 2) Director, Department of Environment, Barishal/Khulna Divisional Office, Barishal / Khulna.
- 3) Deputy Director, Department of Environment, Bagerhat District Office, Bagerhat.
- 4) Assistant Director, Office of the Director General, Department of Environment, Head Office, Dhaka

## 4.5. Sample of correspondence of EHS issue from DDSC&PMSC



**Coastal Embankment Improvement Project, Phase-1 (CEIP-1)**  
CEIP-1 Project Office, Road 18, House 36, Flat D-1, Block J, Banani, Dhaka 1213, Bangladesh

Return address: Postbus 151, 6500 AD, Nijmegen, The Netherlands

HASKONINGDHV NEDERLAND B.V.  
WATER

Jonkerbosplein 52  
Postbus 151  
Nijmegen 6500 AD  
The Netherlands  
+31 (0)24 328 42 84 Telephone

To  
**Mr. Li Guofang**  
Acting Project Manager,  
Chongqing International Construction Corporation  
House#18/B, Apt.#F-1, Road # 48  
Gulshan-2, Dhaka-1212  
Bangladesh

Your reference : None  
Our reference : RDCOR\_BC5883-100\_L002351\_JHL\_MIP  
Direct line : 0193 5146 720  
E-mail : [harrie.laboyrie@rhdhv.com](mailto:harrie.laboyrie@rhdhv.com)  
Date : 04 November, 2019  
Enclosure(s) : None

**Subject : Establishing Hygienic Latrine at Camps and Work Sites under CEIP-1, Package-2**

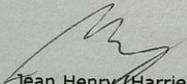
**Dear Mr. Li Guofang,**

According to the Third Annual Environmental Audit report, prepared by the Third-Party M&E Consultants, it has been observed that most of the latrines used by the workers at work sites were found to be unhygienic with no water seal and some of them were found to be located close to water bodies.

It is recommended by them that the Contractor should ensure hygienic latrine for the workers and ensure water seal in each latrine and they should not be located within 10-metre of any water body or source of drinking water. According to the latest Comment of the World Bank, the number of Latrines should be sufficient in proportionate to the number of Workers at the Construction Sites.

In view of the above circumstances, you are requested hereby to take immediate all required actions for establishing hygienic latrine for the workers following the related recommendations mentioned in order to ascertain improved Environment, Health and Safety (EHS) activities in the CEIP-1.

With best regards.

  
Jean Henry (Harrie) Laboyrie  
Team Leader, CEIP-1  
Detailed Design Construction Supervision and Project Management Support

**Copy To:**

1. Mr. Md. Habibur Rahman, Deputy Team Leader, CEIP-1, DDSC & PMS Consultant, Dhaka
2. Mr. Md. Mahidur Rahman, Deputy Team Leader, M&E Consultants, Gulshan-2, Dhaka-1212
3. Mr. Mohammad Ali, Deputy Resident Engineer, CEIP-1, DDSC & PMS Consultant, Patuakhali
4. Mr. Amir Faisal, Sr. Environmental Specialist, PMU, CEIP-1, BWDB, Gulshan-2, Dhaka
5. Mr. Abu Bakr Siddique, Environmental Specialist, CEIP-1, DDSC & PMS Consultants, Dhaka
6. Dr. Md. Towhidul Islam, Environmental Specialist, CEIP-1, PMU, Khulna
7. Office copy

A company of Royal HaskoningDHV

1/1

**Coastal Embankment Improvement Project, Phase-1 (CEIP-1)**  
CEIP-1 Project Office, Road 18, House 36, Flat D-1, Block J, Banani, Dhaka 1213, Bangladesh

Return address: Postbus 151, 6500 AD, Nijmegen, The Netherlands

HASKONINGDHV NEDERLAND B.V.

WATER

To  
**Mr. Sun Huaxin**  
Project Manager  
The First Engineering Bureau  
Of Henan Water Conservancy  
House # 411, Road # 04  
Sonadanga R/A (2<sup>nd</sup> Phase), Khulna  
Bangladesh

Jonkerbosplein 52  
Postbus 151  
Nijmegen 6500 AD  
The Netherlands  
+31 (024) 328 42 84 Telephone  
info@rhdhv.com E-mail  
www.royalhaskoningdhv.com Internet  
Gool-, Eem- en Flevoland 56515154 CoC

Your reference : None  
Our reference : RDCOR\_BC5883-100\_L002425\_JHL\_MIP  
Direct line : 0193-5146-720  
E-mail : [harrie.laboyrie@rhdhv.com](mailto:harrie.laboyrie@rhdhv.com)  
Date : 18 December, 2019  
Enclosure(s) : None  
**Subject : Provision of Grievance box in work sites under CEIP-1, Package-1**

**Dear Mr. Sun Huaxin,**

According to the EIA requirement some Grievance collection boxes need to be established at various work sites of CEIP-1 areas and it is also observed that few numbers of such boxes have been erected at different work sites accordingly.

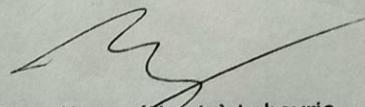
But the numbers of such boxes have been found to be inadequate, as observed by the World Bank Senior Environmental Specialist during his latest visit. He also felt that the location of such boxes should be in open areas suitable for the workers or any other stakeholders.

Thus, the number and location of grievance boxes for Package-1 working areas have been worked out as follows:

1. Polder 32 - 2 number of boxes, 1 at camp site of Polder-32 and 1 at Nalian closure site
2. Polder 35/1 - 3 number of boxes, all at 3 different locations of Tafalbari camp site

You are requested to establish the Grievance boxes at above mentioned locations within 01 (One) week period after receiving this letter.

With best regards

  
Jean Henry (Harrie) Laboyrie  
Team Leader, CEIP-1  
Detailed Design Construction Supervision and Project Management Support

## 4.6. Environmental Compliance / Non-Compliance Report: Package 01

Environmental Issues	Types of Compliance, Non-Compliance & Repeating Non Compliance	Total no. of Compliance in Package 01 for the year	Total no. of Non-Compliance in Package 01 for the year	Total no. of repeating Non-Compliance in Package 01 for the year
Construction Camps	Obtaining approval	92	0	0
	Erection of signboard in Bangla and English with project details	92	0	0
	Install accommodation facilities for workers	92	0	0
	Drainage channels installation	86	0	0
	Supply of safe drinking water	92	0	0
	Supply of adequate sanitation	88	0	0
	Solid fencing and demarcation to prevent villagers from entering the premises	92	0	0
	Safety protocols and measures for using electrical appliances	0	0	0
	Infrastructure for adequate	4	0	0
Fuel storage areas	Install hardstand and secondary containment	92	0	0
	Firefighting equipment installation	92	0	0
	Sand and shovel close-by	92	0	0
	Regular checks on physical condition	92	0	0
	The Material Safety Data Sheet (MSDS) from supplier of hazardous substances (diesel, oil, lubricant) will be collected and placed besides containers/storage.	7	0	0
	Spill kit/absorbent mat will be in place to catch any spilled fuels at the location where potential spillage may occur.	8	0	0
	Sufficient hydrants to address potential fire should be equipped at fuel storage area as well as the areas where chemicals/fuels are used.	8	0	0
	Maintain minimum distance during fueling and fueling	8	0	0
	Provide eye protective glass	7	0	0
Provide hand gloves	7	0	0	
Access road construction	Obtaining approval	92	0	0
	Construction of culverts if needed	27	0	0
Temporary Facilities Decommissioning	Agreeing with local authorities on demolition	0	0	0
	Review of Environmental liabilities	0	0	0
	Waste removal	0	0	0
	General re-instatement of site	0	0	0
	Revegetation implementation	0	6	0
	Close-out check	0	1	0
Construction and Demolishing of drainage sluices, flushing sluices and inlets	Demolishing debris of sluices and inlets will be disposed of at a site approved by the Engineer.	60	20	0
	Before starting the construction activities of drainage sluices ring bundh and diversion channel will be installed in order to work in dry	80	0	0

Environmental Issues	Types of Compliance, Non-Compliance & Repeating Non Compliance	Total no. of Compliance in Package 01 for the year	Total no. of Non-Compliance in Package 01 for the year	Total no. of repeating Non-Compliance in Package 01 for the year
	conditions.			
	Disposal of excess soil will be done with no objection from DoE and local authority.	80	0	0
	No waste water from concrete mixing will be disposed of directly to the surface water.	80	0	0
	Steel sheet pile driving will not be done at night.	80	0	0
	The work area will be demarcated clearly.	80	0	0
	Signals will be installed to indicate the entry and exits of vehicles and movement of construction equipment in the work area.	80	0	0
	Prior to every monsoon season all the temporary and permanent drainage structures under construction will be made free from debris.	80	0	0
Construction and re-sectioning of embankments	Pavement (if present) will be removed and disposed of at the premises of BWDB	7	20	0
	Top soil from areas of earth works will not be used for construction works. The top soil (from surface to 15 cm depth) will be removed and preserved for later use of replacing after construction in rehabilitation.	31	60	0
	Disposal of excess soil will be done at site with no objection from DoE and local authority.	21	71	0
	All works will be demarcated clearly.	92	0	0
	Signals will be installed to indicate the entry and exits of vehicles and movement of construction	68	24	0
	The contractor shall manage the top soil (15 cm) during earth work activities	0	67	0
	Check the physical condition of excavator regularly	1	0	0
	Conduct the toolbox talk before starting the work	2	0	0
	Training on driving safety at regular interval	0	0	0
	Rise the wire up to enough height before starting the work	1	0	0
	Check the physical condition of compaction vehicle	0	0	0
The bank and slope protection works	Spilling of earth material in surface water will be avoided.	7	0	0
	Turfing will be applied to prevent erosion	46	0	0
	Proper drainage provision will be kept to avoid formation of rain cuts due to surface run off.	40	4	0
Re-excavation works	Spoil plan (volume to be dredged; disposal site to be used; quality of dredged material; applicability of dredged material) to be developed for approval by Engineer.	40	49	0
	Unnecessary resuspension will be avoided by selection of suitable dredging equipment.	2	3	0
	Temporarily deposition of dredged material will be away from the channel edge to limit damage to	2	0	0

Environmental Issues	Types of Compliance, Non-Compliance & Repeating Non Compliance	Total no. of Compliance in Package 01 for the year	Total no. of Non-Compliance in Package 01 for the year	Total no. of repeating Non-Compliance in Package 01 for the year
	streamside and stream habitats.			
	Return water will be conveyed through siltation chambers to avoid high loads of fines to be discharged on surface water.	2	0	0
	Where applicable biotechnical Engineering, for example, geo textile, may be used to help stabilize the material.	0	0	0
	Smothering of important flora and habitats will be avoided.	1	0	0
	Provide solid demarcation around the excavation	1	0	0
	Establish sufficient sign /signaling that can be visible at night	0	0	0
	Erect light reflective signboard	1	0	0
	Set and check the stability of excavator after certain interval during work	0	0	0
	Conduct the toolbox talk before starting the work	0	0	0
Manufacture of pre-cast CC blocks	Workers will be equipped with proper PPE.	85	0	0
	Signals will be installed to indicate the entry and exits and movement of vehicles construction in the work area.	85	0	0
	Manufacturing will not take place at night.	85	0	0
	Stacks with sand will be covered or wetted.	85	0	0
	Provide noise control barrier around the plant area as possible	0	0	0
	Make a closed chamber for plant operator	1	0	0
	Periodic hearing check for the exposed workers	1	0	0
	Shifting duty for the noise exposed areas	1	0	0
	Spray water at certain intervals in the plant area	0	0	0
	Wet and clean the aggregate before using	1	0	0
	Cover/wet dusty parts or materials	1	0	0
	No operation without the screen or barrier provided with the machine	1	0	0
	Conduct toolbox talk regularly	0	0	0
Borrow Material	Agreeing on borrow area	92	0	0
	Document borrow area	1	64	0
	Perform soil analyses on borrow materials when contamination is expected	86	0	0
	Prevention of erosion/dust forming	89	0	0
	Borrow area excavation complying with distance from the embankment as per the technical specification	87	0	0
	No-Tress pass line fixed with bamboo poles	42	0	0
	Check the physical condition of excavator regularly	6	0	0
	Conduct toolbox talk before starting the work	8	0	0



Environmental Issues	Types of Compliance, Non-Compliance & Repeating Non Compliance	Total no. of Compliance in Package 01 for the year	Total no. of Non-Compliance in Package 01 for the year	Total no. of repeating Non-Compliance in Package 01 for the year
	Training on driving safety at regular interval	8	0	0
	Check the physical condition of truck regularly	7	0	0
Hard Rock Revetment	Workers will be equipped with appropriate PPE	0	0	0
	Special command, wear labor protection including life jacket and hold red flags	0	0	0
	Forklift transfer prefabricated block strict control speed, orderly loading slow down	0	0	0
	During barge placement, the prefabricated blocks are balanced and stacked from both sides.	0	0	0
	The ship is equipped with life-saving equipment	0	0	0
	Cast positioning ship during slow operation, no zoom too fast to cause the barge violent sloshing	0	0	0
	Barge sloshing is serious during throwing. It is strictly forbidden to stand on the edge of barge to avoid safety accident	0	0	0
	Alignment to be pre-determined	0	7	0
	CC Blocks/hard rocks to be stacked/stored at appropriate/designated place/distance	0	0	0
	Maintain and follow work safety protocols/measures	0	0	0
Occupational Health and Safety	Development of Health and Safety plan including emergency procedures	92	0	0
	Train all staff in health and safety	92	0	0
	Provision of HIV, including STI (Sexually Transmitted Infections) information, education and communication	27	0	0
	Provision of PPE and ensuring their use	85	0	0
	Provision and use of life jacket during visiting campsite/worksites by boat	72	0	0
	Installation of first aid facilities at work site and camps with adequate stock	92	0	0
	Provide sanitation facilities where needed	92	0	0
	Provision of safe drinking water to work force (tube-well water, bottled water or pond water)	92	0	0
Public Health and Safety	Proper signaling of work areas	50	0	0
	Notification of the public adjacent to the construction areas	92	0	0
	Installation of dedicated pathways for pedestrians	92	0	0
	Proper signaling of work areas	92	0	0
	Limitation of construction vehicles at public roads during peak hours.	92	0	0
	The temporary traffic detours in settlement areas will be kept free of dust by frequent application of water	91	0	0
Construction activities will be	90	0	0	

Environmental Issues	Types of Compliance, Non-Compliance & Repeating Non Compliance	Total no. of Compliance in Package 01 for the year	Total no. of Non-Compliance in Package 01 for the year	Total no. of repeating Non-Compliance in Package 01 for the year
	undertaken according to during daylight working hours between the hours of 07:00-17:00 on week days			
Water Supply	Providing construction camps with portable water either through installing tubewells (hand pump, shallow and deep tubewell), pond Sand Filter (PSE) or supplying safe bottled water	92	0	0
	Ensuring the location plan of tubewells (used for supplying potable water) that these are not sited near any sanitation facilities as to avoid water pollution	8	0	0
	Maintaining the distance of a tubewell/surface water resource from a soak pit at minimum 15 m	32	0	0
	Maintaining the drainage from the tubewell diverting into the drainage system of the camp area	0	6	0
	Providing separate tubewells for the use of women.	0	2	0
Sanitation	Providing suitable sanitation facilities for the workforce	92	0	0
	Ensuring the location plan of the latrine at least 50 m away from the accommodation facility	48	0	0
	Providing separate latrines for the use of women	72	0	0
	Installing treatment facilities (i.e. septic tank, soak pits etc.) for the sewerage of toilet and camp site wastes.	71	0	0
	Arranging disposal of wastewater from washrooms, kitchens, s, etc. via the camp area's drainage system	8	0	0
Solid Waste Management	Ensuring collection and disposal of solid wastes within the construction camps and work areas	92	0	0
	Taking measure to collect and store inorganic wastes in a safe place within the household and organic wastes cleared on daily basis to waste collector.	72	20	0
	Establish measures for Waste collection, transportation and disposal systems at approved disposal sites.	28	41	0
	Disposal of construction and demolition waste.	26	62	0
Waste water	Installation of decanter boxes for washing buckets and cement mixers	52	40	0
	Installation of proper filtering elements.	0	92	0
	Carrying out periodic checks and clean-ups for the decanter box.	48	43	0
	Prioritize reuse of aggregates and water from the decanter box.	27	64	0
	Ensure safe disposal of liquid wastes generated at camp site.	72	20	0
Air	Regular maintenance of vehicles	92	0	0
	Covering or wetting of dusty materials	92	0	0
	Dust suppression by wetting surfaces	86	0	0
	Impose speed limits	71	0	0

Environmental Issues	Types of Compliance, Non-Compliance & Repeating Non Compliance	Total no. of Compliance in Package 01 for the year	Total no. of Non-Compliance in Package 01 for the year	Total no. of repeating Non-Compliance in Package 01 for the year
	Revegetate bare surfaces soonest	0	0	0
Noise	Notify nearby population prior to any typical noise events	92	0	0
	Ensure construction activities do not generate unacceptably high level of noise	92	0	0
	Restrict working to daylight hours	92	0	0
	Locate noisy equipment / facilities away from sensitive receptors	92	0	0
Water and Hydrology	Preventing waste, soil, etc. entering in the water system by waste collection, revegetation and dust suppression etc.	92	0	0
	Insure proper drainage of working areas e.g. perimeters lines must be provided with open shallow drains	0	88	0
Flora and Fauna	Agreeing with local authorities on tree felling.	84	3	0
	Document trees / area of trees.	0	41	0
	Avoid/prevent un-necessary tree vegetation cutting and clearing.	0	44	0
	Revegetate disturbed construction and ancillary site surfaces.	0	5	0
	Prevent disturbance of animals	85	1	0
	Ensuring sufficient free flow in the construction work for fish migration	88	3	0
Monitoring of Air Quality	Performance of air quality tests at selected sensitive sites for parameters SPM 2.5/10, SOx, NOx and CO during working hours	92	0	0
Monitoring of Noise Quality	Monitoring of noise level (dB) at selected sensitive sites during working hours	92	0	0
Monitoring of Soil Quality	Performance of soil quality tests at selected sites (borrow areas, spill sites) for parameters as organic matter, N, P, K, pH, Salinity, S and Zn.	92	0	0
Monitoring of Surface Water Quality	Performance of analyses on surface water (river, khal, beel and pond) for: pH, TDS, DO, BOD, EC/Salinity and Turbidity.	92	0	0
Monitoring of Drinking Water Quality	Performance of analyses on drinking water for: arsenic, iron, chloride and total faecal coliform bacteria.	92	0	0
Deployment of Environment and Safety Supervisor	Employ one full-time Environment and Safety Supervisor for compliance monitoring of EMP	28	0	0
Complaints and Environmental Incidents	Grievance Redress Mechanism will be established.	72	20	0
	Complaints received from the public or other stakeholders will be registered and recorded and be brought to the attention of the Site Engineer.	91	0	0
	All environmental incidents occurring on the site will be recorded and be brought to the attention of the Site Engineer.	91	0	0
	Action will be taken within 7 working days.	47	0	0
Reporting and Documentation	The following records will be kept at site: - Environmental Monitoring Results - Contractors self-assessment	428	0	0

Environmental Issues	Types of Compliance, Non-Compliance & Repeating Non Compliance	Total no. of Compliance in Package 01 for the year	Total no. of Non-Compliance in Package 01 for the year	Total no. of repeating Non-Compliance in Package 01 for the year
	record/results - Register of non-compliance - Register of corrective actions - Monthly Environmental Reports			
Training	Environmental training on EMP will be arranged for Construction Field supervisors and Environment & Safety Supervisors.	30	0	0
Construction of the closure dam	The area is separated by demarcation.	4	0	0
	Erection of proper cautionary signboard & signage.	4	0	0
	Provide and uses of required PPE, especially use of life-jacket on barge.	4	0	0
	Provide safe drinking water for staff & workers.	4	0	0
	Assure FAF in site.	4	0	0
	Installed hygienic toilet facilities in site.	4	0	0
	Make available the required Fire extinguisher.	4	0	0
	Assure proper signal to control community access.	4	0	0
	Development of smart waste management system.	4	0	0
	EHS training & Tool-box talk before work start.	4	0	0
Electrical safety	Clearly visible notification on the safe use of electrical appliances	8	0	0
	Check all wirings to prevent any accident, fire due to short circuit	8	0	0
	Rise the wire system up or underground conduit system should be established	5	0	0
	Regular check the switch board and wire system	3	0	0
	Close all the switch board properly. Only responsible will check at regular intervals	5	0	0
	Cover the joint by tape or other insulating materials	4	0	0
Forklift Operation	Designate movement routes for forklifts	0	1	0
	No overloading	0	0	0
	Warning lights/sound during movement of forklifts	0	0	0
	Maintain the speed limit	0	0	0
	Prepare the safe operation manual	0	0	0
	Conduct regular toolbox talk	0	0	0
	Provide forklift safety training	0	0	0
Safety at Barge	Occupational safety measures to be maintained	7	0	0
	Proper anchorage	4	0	0
	Balanced loading	4	0	0
	Workers to use PPE	4	0	0
	Maintain speed limit of forklift	4	0	0
	Regular toolbox talk	4	0	0
	Separate lane for pedestrian and	0	3	0

Environmental Issues	Types of Compliance, Non-Compliance & Repeating Non-Compliance	Total no. of Compliance in Package 01 for the year	Total no. of Non-Compliance in Package 01 for the year	Total no. of repeating Non-Compliance in Package 01 for the year
	forklift			
	Make a forklift safety procedure	0	0	0
	Regular check and maintenance of the scraper	0	0	0

#### 4.7. Environmental Compliance / Non-Compliance Report: Package 02

SI	Environmental Issues	Types of Compliance, Non-Compliance & Repeating Non-Compliance	Total no. of compliance in Package 01 for the year	Total no. of non-compliance in Package 01 for the year	Total no. of repeating non-compliance in Package 01 for the year
1	Construction of Base camp	Obtaining approval for facilities construction work	122	0	0
		Erection of signboard in Bangla and English with project details	122	0	0
		Install accommodation facilities Engineers and other staff/workers	113	15	0
		Drainage channels installation	122	0	0
		Supply of safe drinking water	122	0	0
		Supply of adequate sanitation facilities	122	0	0
		Safety fencing/Barriers and Entry Kiosks	122	0	0
		Stack yard for plant and equipment	122	0	0
		Construction of storeroom/warehouse	122	0	0
		Temporary workshop facilities	100	22	0
		Arrangement of sufficient lighting facilities in the camp area	114	0	0
2	Fuel storage areas	Install hardstand and secondary containment	107	15	0
		Fire-fighting equipment installation	122	0	0
		Sand and shovel close-by	122	0	0
		Regular checks on physical condition	122	0	0
		Approval fuel storage	112	0	0
3	Access road to the base camp	Obtaining approval	122	0	0
		Construction of culverts if needed	0	122	0

SI	Environmental Issues	Types of Compliance, Non-Compliance & Repeating Non-Compliance	Total no. of compliance in Package 01 for the year	Total no. of non-compliance in Package 01 for the year	Total no. of repeating non-compliance in Package 01 for the year
		Construction of temporary road	122	0	0
4	Training	Environmental training on EMP will be arranged for Construction Field supervisors and Environment & Safety Supervisors	122	0	0
5	Occupational Health and safety	Development of Health and Safety Plan including emergency procedures	115	7	0
		Train all staff in health and safety	122	0	0
		Provision of HIV, including STI (sexually transmitted infections) information, education and communication	74	48	0
		Provision of PPE and ensuring their use	122	0	0
		Provision and use of life jacket during visiting campsite/worksites by boat	119	3	0
		Installation of first aid facilities at work site and camps with adequate stock	122	0	0
		Provide sanitation facilities where needed	122	0	0
		Provision of safe drinking water to work force (tube-well water, bottled water or pond water)	122	0	0
		Proper signaling of work areas	122	0	0
6	Public Health and Safety	Notification of the public adjacent to the construction areas	122	0	0
		Installation of diversion signboard with warning for dedicated pathways for pedestrians	122	0	0
		Proper signaling of work areas	122	0	0
		Limitation of construction vehicles at public roads during peak hours	71	51	0
		The temporary traffic detours in settlement areas will be kept free of dust by frequent application of water	101	21	0
		Construction activities will be undertaken according to during daylight working hours between the hours of 07:00 – 17:00 on weekdays	122	0	0
7	Water Supply	Providing construction camps with potable water either through installing tube wells (hand pump, shallow and deep tubewell), Pond Sand Filter (PSF) or supplying safe bottled water	122	0	0
		Ensuring the location plan of tube wells (used for supplying potable water) that these are not sited near any sanitation facilities as to avoid water pollution	122	0	0

SI	Environmental Issues	Types of Compliance, Non-Compliance & Repeating Non-Compliance	Total no. of compliance in Package 01 for the year	Total no. of non-compliance in Package 01 for the year	Total no. of repeating non-compliance in Package 01 for the year
		Maintaining the distance of a tube well / surface water resource from a soak pit at minimum 15m	122	0	0
		Maintaining the drainage from the tube well diverting into the drainage system of the camp area	121	1	0
		Providing separate tube wells for the use of women	45	77	0
8	Sanitation	Providing suitable sanitation facilities for the workforce	122	0	0
		Ensuring the location plan of the latrine at least 50 meters away from the accommodation facility	122	0	0
		Providing separate latrines for the use of women	102	20	0
		Installing treatment facilities (ie septic tank, soak pits etc) for sewerage of toilet and camp site wastes	122	0	0
		Arranging disposal of wastewater from washrooms, kitchens, etc via the camp area's drainage system	122	0	0
9	Solid Waste Management	Ensuring collection and disposal of solid wastes within the construction camps and work areas	121	0	0
		Taking measure to collect and store inorganic wastes in a safe place within the household and organic wastes cleared on daily basis to waste collector	81	41	0
		Establish measures for Waste collection, transportation and disposal systems at approved disposal sites	81	41	0
		Disposal of construction and demolition waste	102	20	0
10	Waste water	Installation of decanter boxes for washing buckets and cement mixers	101	21	0
		Installation of proper filtering elements	122	0	0
		Carrying out periodic checks and clean- ups for the decanter box	0	122	0
		Prioritize reuse of aggregates and water from the decanter box	21	101	0
		Ensure safe disposal of liquid wastes generated at camp site	122	0	0
11	Air	Regular maintenance of vehicles	122	0	0
		Covering or wetting of dusty materials	122	0	0
		Dust suppression by wetting surfaces	122	0	0
		Impose speed limits	122	0	0
		Re-vegetate bare surfaces soonest	79	43	0

SI	Environmental Issues	Types of Compliance, Non-Compliance & Repeating Non-Compliance	Total no. of compliance in Package 01 for the year	Total no. of non-compliance in Package 01 for the year	Total no. of repeating non-compliance in Package 01 for the year
12	Noise	Notify nearby population prior to any typical noise events	122	0	0
		Ensure construction activities do not generate unacceptably high level of noise	122	0	0
		Restrict working to daylight hours	122	0	0
		Locate noisy equipment / facilities away from sensitive receptors	122	0	0
13	Water and Hydrology	Preventing waste, soil, etc entering in the water system by waste collection, re-vegetation and dust suppression etc	122	0	0
		Ensure proper drainage of working areas eg perimeters lines must be provided with open shallow drains	122	0	0
14	Monitoring of Drinking Water Quality	Performance of analyses on drinking water for: arsenic, iron, chloride and total faecal coliform bacteria	122	0	0
15	Deployment of Environment and Safety Supervisor	Employ one full-time Environment and Safety Supervisor for compliance monitoring of EMP	122	0	0
16	Complaints and Environmental Incidents	Grievance Redress Mechanism will be established	39	99	0
		Complaints received from the public or other stakeholders will be registered and recorded and be brought to the attention of the Site Engineer	122	0	0
		All environmental incidents occurring on the site will be recorded and be brought to the attention of the Site Engineer	122	0	0
		Action will be taken within 7 working days	83	39	0
17	Reporting and Documentation	The following records will be kept at site:	122	0	0
		Environmental Monitoring Results			
		Contractors self-assessment record/results			
		Register of non-compliance			
		Register of corrective actions			
		Monthly Environmental Reports			

## 4.8. Selected Photos from the Audit

### Package 01

#### Good Practices



Presence of required signboard and signage at Nalian Closure Dam under polder-32



Discussion with local peoples at Nalian Closure Dam under polder-32 who confessed that they are not experiencing any problems for the works



Designated Waste Dumping Area at Nalian Closure Dam under polder-32



Sanitary Latrines for workers at Nalian Closure Dam under polder-32



Presence of Grievance collection box at Tafalbari CC block manufacturing yard under polder-35/1



First aid box with adequate items and drinking water for the workers at Tafalbari CC block manufacturing yard under polder-35/1



Overall management of fuel storage is good at Tafalbari CC block manufacturing yard under polder-35/1



Local workers using PPE at Tafalbari CC block manufacturing yard under polder-35/1



Fire extinguisher presence in the work site with valid expiry date at Tafalbari CC block manufacturing yard under polder-35/1



Separate place for solid waste management at Tafalbari CC block manufacturing yard under polder-35/1

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## Bad Practices



Workers welding work without using proper PPE at Nalian Closure Dam under polder-32



No demarcation in the work site at Nalian Closure Dam under polder-32



Fire extinguisher presence but no production and expiry date at Main Camp (Dacope) under polder-32



Oil drum, Gas cylinder and metallic waste are kept at Main Camp (Dacope) under polder-32



Scenario of Latrine at Main Camp (Dacope) under polder-32



Scenario of storeroom at Main Camp (Dacope) under polder-32



Forklift moves in the work site at Tafalbari CC block manufacturing yard under polder-35/1. But no signal man presence in the worksite and vehicle driver did not use any PPE.



Dry wood, bamboo and metallic waste are kept at Tafalbari CC block manufacturing yard under polder-35/1.



Structure work has been completed but gate not yet installed and water logging at DS-4 under polder-35/1.



Water has been contaminated for long time water logging beside DS-4 under polder-35/1.



Structure work has been completed but gate not yet installed, and crushed stones are around FS-5 under polder-35/1.



Bank Protection work has been completed but crushed stones are around later in the Ch: km 16+774 under polder-35/1.

**Package 02**

**Good Practices**



Separate room for Metal waste, plastic waste and other waste at Nadmullah CC Block manufacturing yard under polder-39/2C



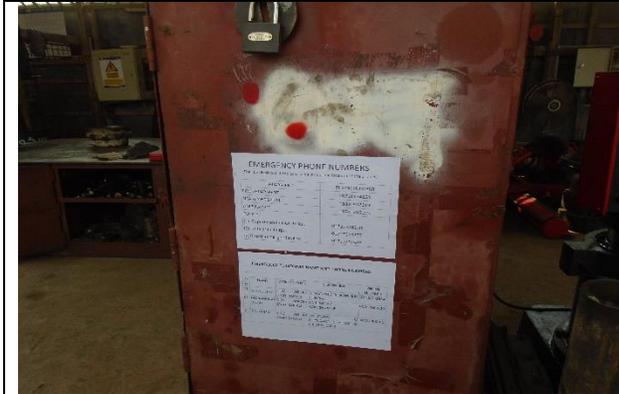
Overall management of storeroom is good at Nadmullah CC Block manufacturing yard under polder-39/2C



Presence of Grievance collection box at Nadmullah CC Block manufacturing yard under polder-39/2C



Direction of signal man for the entrance of forklift in Nadmullah CC Block manufacturing yard under polder-39/2C from barge.



Contract information of Environmental responsible/emergency staff at charkhali CC Block manufacturing yard under polder-39/2C



Supply of drinking water and First Aid box for the workers at charkhali CC Block manufacturing yard under polder-39/2C



Using PPE Workers are working at DS-10 under polder-39/2C



Presence of required signage, demarcation and fencing at DS-10 under polder-39/2C



Supply of drinking water and First Aid box for the workers at DS-10 under polder-39/2C



Overall management of Generator room is good at DS-10 under polder-39/2C



Motorcycle parking area and complaint collection box in designated area at Burirchar CC Block manufacturing yard under polder-41/1



Overall management of fuel storage is good at Burirchar CC block manufacturing yard under polder-41/1



Designated Waste Food Area at Burirchar CC Block manufacturing yard under polder-41/1



Separate place for industrial waste at Burirchar CC block manufacturing yard under polder-41/1

Bad Practices



Workers welding work without using proper PPE at Nadmullah CC Block manufacturing yard under polder-39/2C



Overall drainage system is not good at Burirchar CC block manufacturing yard under polder-41/1



Structure work has been completed but gate not yet installed, and water logging for a long time at DS-8 under polder-41/1.



Structure work has been completed but gate not yet installed, and water logging for a long time at DS-6 under polder-41/1.



Open and unsafe latrine used by the workers is directly connected to the river at Gulbonia CC block manufacturing yard under polder-41/1



Workers without using PPE at Gulbonia CC block manufacturing yard under polder-41/1



Scenario of storeroom at Alipur CC block manufacturing yard under polder-48



After using cement, the bags are stacked along the river at Alipur CC block manufacturing yard under polder-48



Electric wire haphazardly on the ground at DS-2/A under polder-48



Workers work without PPE at DS-2/A under polder-48



No demarcation in the worksite at DS-6 under polder-48



Workers work without PPE at DS-6 under polder-48

#### 4.9. Action Plan of the 4<sup>th</sup> Annual Environmental Audit Findings

SI	ACTION TO BE TAKEN	PARTY RESPONSIBLE	TARGET DATE	REMARKS
1	Contractors of both Packages should follow the findings and recommendations of this audit.	Contractors of Package 01 and Package 02	Continuous process as and when applicable	
2	The DDCS&PMS Consultants and PMU should consider the recommendations for the upcoming next phase of the project where applicable.	DDCS&PMS Consultants and PMU	To adopt as and when required	
3	The audit report should be shared with the Contractors, Consultants, relevant sub-Consultants, NGOs and PMU staff and the responsible parties should address the findings.	Third Party M&E Consultants with PMU, PMU with relevant consultants, sub-consultants, NGOs and contractors who should address the findings	15 February 2021	
4	Both the Contractors recommended to revise the EAPs and C-ESMPs considering the frequencies for environmental monitoring testing suggested in EMPs in their next revision.	Contractors of Package 01 and Package 02	28 February 2021	
5	The Contractors of both Package 01 and Package 02 must address the risks of air quality (e.g. emissions from plants, vehicle), and the environmental and health risk for poor drinking water and sanitation facilities with EHS Risk Assessment reports.	Contractors of Package 01 and Package 02	31 January 2021	
6	Considering the smaller number of EMP implementation budget items with the contract of Package 01, it is recommended that DDCS&PMSC monitor the	DDCS&PMSC, ME& Consultants and PMU	To be continued up to closure of Package 01 works	

SI	ACTION TO BE TAKEN	PARTY RESPONSIBLE	TARGET DATE	REMARKS
	implementation of mitigation measures for each impact area to ensure they are properly addressed. The M&E Consultants and PMU to continue to spot-check.			
7	PMU with the assistance of DDCS&PMS Consultants and M&E Consultants to incorporate an assessment of the environmental impacts of the completed works of Package 01 in the next Bi-Annual Environmental Monitoring Report.	PMU with assistance of DDCS&PMS Consultant M&E Consultants	15 February 2021	
8	PMU with the assistance of DDCS&PMS Consultants and M&E Consultants to conduct a supervision for ongoing works to evaluate whether it is following environmental good practice and health and safety measures are in place. In case of any gap identified, the contractor needs to prepare a retrofit action plan and continue with monitoring.	PMU with DDCS&PMS Consultants, M&E Consultants and Contractors	Continuous	
9	DDCS&PMS Consultants need to include how EMP compliance will be monitored and achieved with their Quality Assurance Plan.	DDCS&PMS Consultants	28 February 2021	
10	As the compliance level for the Decommissioning of Temporary Facilities and Hard Rock Pavement is extremely poor, the Package 01 Contractor needs to ensure necessary efforts to improve the	Contractor of Package 01	15 February 2021	The improvement to be continued

SI	ACTION TO BE TAKEN	PARTY RESPONSIBLE	TARGET DATE	REMARKS
	compliance level.			
11	To improve the unhygienic conditions of the toilets of Contracts of Package 01 and Package 02, they need to ensure soak pit/ septic tanks with all constructed toilets, regular cleanliness and maintenance of the toilets, water seal with all toilets, supply of sufficient water and soap inside the toilets. Moreover, sensitizing the workers regularly on hygienic practices should be also carried out.	Contractor of package 01 and package 02	15 February 2021	
12	PMU is requested to share the ESIRT toolkit with WB for their review and both the Contractors need to follow the Environmental Social Response Tool (ESRIT) kit as it is not being followed.	PMU to Share with WB and Contractors of Package 01 and Package 02 to follow	31 January 2021	
13	The practice of using PPE should be enhanced.	Contractors of Package 01 and Package 02	Continuous	
14	Both the Package 01 and Package 02 Contractors of CEIP-1 need to arrange exchange visit for learning and scale up of practices for improvement environmental compliance in their packages in the current year.	Contractors of Package 01 and Package 02	31 March 2021	
15	Both the Contractors need to carry out environmental monitoring testing as per the schedule every year.	Contractors of Package 01 and Package 02	15 February 2021	

SI	ACTION TO BE TAKEN	PARTY RESPONSIBLE	TARGET DATE	REMARKS
16	Both Contractors to follow proper record keeping of EHS practices	Contractors of Package 01 and Package 02	20 February 2021	
17	Both the Contractors should carry out the efforts to improve the EHS practices.	Contractors of Package 01 and Package 02	Continuous	
18	EHS practices in Package 02 (other than those in Polder 39/2C) are found to be poor, the Contractor of Package-02 should give continuous effective efforts to improve the EHS practices.	Contractors of Package 02	Continuous	
19	Alternative/ diversion canal should be ensured in case of construction of sluices rather stopping the water flow to reduce environmental stress and people's sufferings.	Contractors of Package 01 & Package 02 and DDCS&MPS Consultants	Continuous as and when required	
20	Both the contractors need to fix the gates of the completed sluices and WMGs should be formed and functional to reduce the environmental stress and people sufferings in their agriculture.	Contractors of Package 01 and Package 02; DDCS&PMSC NGOs; PMU.	30 April 2021	
21	Long Term Monitoring, Research, and Analysis of Bangladesh Coastal Zone Consultants need to add section with the report by giving ideas how biodiversity/ecology and environment may be impacted in relation to the polder development activities.	Long Term Monitoring, Research, and Analysis of Bangladesh Coastal Zone Consultants	30 April 2021	
22	The activity of polder development plan of Long Term Monitoring, Research, and	Long Term Monitoring, Research, and Analysis of Bangladesh Coastal	30 April 2021	

SI	ACTION TO BE TAKEN	PARTY RESPONSIBLE	TARGET DATE	REMARKS
	Analysis of Bangladesh Coastal Zone Consultants is suggested to include study or polder specific EIA on the areas about environmental status and the study should include the environmental base line information/ impacts/constraints/ challenges may be evolved for polder development as well as the measures will be needed to be taken.	Zone Consultants		
23	The updated design and specification Long Term Monitoring, Research, and Analysis of Bangladesh Coastal Zone Consultants need to consider the environmental aspects.	Long Term Monitoring, Research, and Analysis of Bangladesh Coastal Zone Consultants	Continuous parallel to the design and specification works	
24	Environmental Specialist of the Long Term Monitoring, Research and Analysis Bangladesh Coastal Zone Consultants needs to work by maintaining close coordination including updating about works with the Senior Environmental Specialist of PMU of CEIP-1 and also maintains good collaboration with Environmental Specialists of other Consultants (DDCS&PMS Consultants and 3rd Party M&E Consultants) of CEIP-1.	Long Term Monitoring, Research, and Analysis of Bangladesh Coastal Zone Consultants	31 January 2021	To be continued
25	The training module and the trainings to be carried out by the NGOs should have discussion on the use of	All NGOs of CEIP-1	15 February 2021	For the remaining trainings (if any)

SI	ACTION TO BE TAKEN	PARTY RESPONSIBLE	TARGET DATE	REMARKS
	required PPE during preparation and application of the pesticides. Management of pesticides related waste in sound manner should be also discussed. The proper weather conditions, proper time and wind direction to be followed in case of application of the pesticides should be discussed in training module and during the training. The above the EHS issues for pesticides use should be discussed in IPM and ICM module and during the training of all the NGOs of CEIP-1.			
26	NGOs should involve the local level GoB DAE Officers in their IPM activities.	All NGOs of CEIP-1	As and when applicable during the trainings	
27	Integration and coordination of key agencies who have a role in CEIP-1, even if not funded by the Project, must proceed. Examples are DOF, DAE and others. MOUs may be needed as has been done with the Department of Forestry.	PMU with the assistance of the DDCCS&PMS Consultants	Continuous as applicable	
28	Public awareness of the GRM mechanism must be enhanced as the number of grievances seems to have fallen to negligible levels in the one-year period covered by this audit.	DDCCS&PMS Consultants	Continuous	Efforts have been extended
29	It is recommended to address the polder-specific recommendations of the fourth environmental audit for the items which are applicable in the fields currently (e.g. works	Contractors of Package 1 and Package 2, and the NGOs of relevant polders	Continuous	

SI	ACTION TO BE TAKEN	PARTY RESPONSIBLE	TARGET DATE	REMARKS
	of many audited sites may be accomplished). For information, a polder-specific action items has been annexed with the fourth Annual Environmental Audit report.			
<b>Pending items of 3<sup>rd</sup> Annual Environmental Audit need to be addressed</b>				
30	Along with other Polders, it is recommended that the Contractor of Package 02 concentrate on complying EHS issues at Polder 47/2 and 48 for which the audit found poor EHS practices.	Contractor of Package 02	20 February 2021	Contractor advised to improve significantly by 15 February 2021 and to continue this.
31	Contractor's EAPs and C-ESMPs should be improved continuously as those are living documents. The monitoring frequencies spelled out in the EAPs and C-ESMPs should be consistent with the monitoring frequencies defined with the CEIP-1's EMPs.	Contractors of Package 01 and Package 02	28 February 2021	