

Government of the People's Republic of Bangladesh



Bangladesh Water Development Board

Flood and Riverbank Erosion Risk Management Investment Program Project 2

ADB Loan Number 4107- BAN (COL) & GoN Grant 0799-BAN (EF)

**Semi-annual Environmental Monitoring Report
April - December 2022**

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ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
BWDB	Bangladesh Water Development Board
C.C.	Cement Concrete
CEMP	Contractor's Environmental Management Plan
DoE	Department of Environment
DoF	Department of Fisheries
DPHE	Department of Public Health Engineering
EARF	Environmental Review and Assessment Framework
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMR	Environmental Monitoring Report
EP	Effected People
FGD	Focus Group Discussion
FRERMIP	Flood and Riverbank Erosion Risk Management Investment Program
GoB	Government of Bangladesh
GoN	Government of the Netherlands
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
ISPMC	Institutional Strengthening and Project Management Consultant
JLB	Jamuna Left Bank
JRB	Jamuna Right Bank
NGO	Non-Governmental Organization
PMO	Project Management Office
PLB	Padma Left Bank
PRB	Padma Right Bank
RRA	Rapid Rural Appraisal
SMO	Sub-project Management Office
SO	Section Officer/Sub-Assistant Engineer
PPTA	Project Preparatory Technical Assistance
U.P.	Union Parishad

EXECUTIVE SUMMARY

The 1st Semi-annual Environmental Monitoring Report (EMR) for the period of April to December 2022 of “Flood and Riverbank Erosion Risk Management Investment Program” (FRERMIP Project 2) has been prepared to fulfill the safeguard policy requirement of ADB and in the loan agreement.

After the successful completion of the Tranche 1 project (Project 1) of FRERMIP under the Multi Tranche Financing Facility (MFF) in June 2021, the loan agreement was signed in March 2022 and became effective in April 2022. Works of Tranche 1 was completed in the end of June 2020. The MFF of FRERMIP was anticipated to be implemented in three individual projects, with overlapping projects periods, building on each other. The overall MFF had an original duration of 9 years with each project planned with an implementation period of about 4 years. In April 2021, ADB approved the extension of MFF till 26 June 2024, and at the request of the government for the second and third tranche have been combined into a final and single tranche, which is now Project 2. The total cost for Project 2 is US\$ 212.00 million, of which ADB will finance up to US\$ 157.00 million (loan), the Government of The Netherlands up to US\$ 17.89 million (grant), and the Government of Bangladesh US\$ 37.89 million.

The bidding process of different civil work packages was still ongoing during the reporting period. Notification of award for riverbank protective works of 4 packages have been issue, however no physical work has been started yet. As there was no work, this report also includes only pre-construction environmental monitoring and its mitigation measures. To meet ADB’s reporting requirements, semi-annual EMRs are mandatory to submit ADB for disclosure.

Main objectives of the Project 2 are:

- sustain economic growth, poverty reduction and livelihoods of people (about 11,00,000), living in the areas threatened by riverbank erosion along the Jamuna and Padma Rivers;
- enhance resilience to flood and riverbank erosion risks through improvement of infrastructures strengthening the flood and riverbank erosion management system, including the knowledge base and concerned institutions;
- establish integrated non-structural and structural flood and riverbank erosion risk management measures (by establishing 160 community-based disaster management units (minimum of 35% women-led) and developing their capacity; (ii) training 40 disaster units (14 units out of 40 led by women) created under Project 1 to enhance sustainability; (iii) raising awareness on FRERM; and (iv) strengthening disaster preparedness and emergency response with a focus on women participation)

The structural measures under Project 2 consist of (i) 30 km of riverbank protection with innovative technologies, combined with nature-based solutions for channel closure; (ii) 7.9 km of climate-resilient flood embankment; (iii) a distributary offtake structure; (iv) 2 regulators to improve drainage and river-floodplain connectivity; and (v) 40 km of strengthening of underwater riverbank protection

works following the adaptive approach and 6 km of emergency works. FRERMIP has been categorized as category-A for environment in accordance with ADB's Safeguard Policy Statement (2009).

According to Bangladesh Environment Act (1995) and Environment Conservation Rule (1997), it was categorized as Red Category and a detail Environmental Impact Assessment (EIA) including environmental management plan was done to fulfill the Government of Bangladesh (GoB) requirement. The Red Category projects requires environmental clearance certificate (ECC) from Department of Environment (DoE) every year. The ECC for 2022 have been attached as Annex 1. The application for renewal of the ECC for 2023 is under process at DoE.

Apart from construction impacts, some potential adverse impacts are expected in the subproject operations (i.e. JRB- 1) from new embankments, such as degradation of floodplain aquatic (wetland) habitats due to reduced flooded area, depth, and flood duration; reduced hydrologic connectivity; and physiochemical/ water quality changes. This in turn will adversely affect floodplain-dependent open water fish species migration, population levels, as well as wetland biodiversity services. A number of biodiversity program has been taken up in Project 2 with a view to design and implement compensation activities. Project 2 will establish two types of fish sanctuaries, particularly floodplain fish sanctuaries and river fish sanctuaries. Project 2's EIA, prepared for ADB requirement, identified potential sites for establishing bird and dolphin sanctuaries along the bank of the Padma and the Lower Jamuna.¹ The locations of the potential sites of the said sanctuaries mentioned in the EIA need to assess for the status. Establishment of fish and bird sanctuaries in the major river areas with some physical delimitations will be an innovative effort in Bangladesh.

The procurement of the consultancy package C-07 (Environmental management and Risk mitigation program) is under process. After completion of the JRB-1 physical works, all the floodplain/low land area turned into agricultural land which is already mitigating the crop loss during construction period of the structures. However, the expected positive impacts are not fully visible right now as because 7.9 km out of 29 km FRERMIP embankment construction is yet to be constructed under Project 2.

The possible positive and adverse impacts and their mitigation measures and enhancement are incorporated in the EIA for Project 2. At the field level, contractors are responsible to implement stipulations of the EMP of the project. To comply with the EMP at field level, health and safety commensurate with nation and international laws is included in the construction contracts. A national Environmental Specialist has been engaged to monitor the EMP prepared for the project under the institutional strengthening and project management consultant (ISPMC). A safeguard cell in the Project Management Office (PMO) is responsible to oversee the whole environmental monitoring and management process and verify the claims and grievances raised by community people/farmers if any and finally prepare and submit safeguard report to ADB regularly for disclosure.

The community organizations have not been formed yet. Community organizations will be formed within the coming period, and they will be strengthened through orientation on embankment management, smooth functioning of regulators, improve of the drainage system of the project,

¹ <https://www.adb.org/projects/documents/ban-44167-015-eia-0>

integrated water management, on farm development etc. This provision has been kept under Project 2 and with this training, awareness, active participations, dissemination, operation and maintenance of structures (i.e. embankments, regulators) will be conducted. By this, community will get the full project benefits. Training and capacity development programs conducted for preparation and understanding of EMP, awareness of environmental management and safety effectively, timely implementation of EMP and enhancing the environmental management capacity of Bangladesh Water Development Board's (BWDB) concerned officials and Contractors' representatives.

The civil works involve a large workforce including national and international experts who may be at severe health risk resulting from the COVID-19 pandemic. It is therefore necessary to remain vigilant, and take adequate precautionary measures to identify, prevent, and minimize the spread of COVID-19. This includes enhancement of awareness of workforce, training of medical staff on current advice on COVID-19 risks, establishing isolation and quarantine facilities, dealing with positive patients, transportation of sick person to local or other medical services etc.

All contractors are required to prepare site-specific EMP in line with the EMP included in EIA of the Project 2 in order to better understand and implement the EHS compliance at field. Physical work of the Project is expected to start from February 2023, and EMP compliance monitoring will be expected to be included in the next Semi-annual EMR.

1. INTRODUCTION

1.1 FRERMIP Location and Area

After the successful completion of Tranche 1² FRERMIP under the MFF, financing agreement between the GoB and ADB happened in July 2014, where loan for Project 2 was approved by ADB and became effective in April 2022. The FRERMIP area encompasses the Jamuna River reach, where it starts from the Jamuna Bridge site down to Chandpur on the Lower Meghna. At the downstream side of the Jamuna Bridge, the Jamuna River course is somewhat independent of upstream river developments (see Figure 1.1).

The Flood and Riverbank Erosion Risk Management Investment Program Project 2 implements three subprojects (i) Jamuna right bank-1 (JRB-1) (ii) Jamuna Left Bank-2 (JLB-2) and Padma Left Bank-1 (PLB-1) The FRERMIP area covers 9,300 km² with a total population of 10.50 million (2011 census) in 40 upazilas and 431 unions, with an average population density of nearly 1,600 persons per km² of floodplain land.

1.2 Project Interventions

Proposed interventions under Project 2 fall into four categories:

- (i) riverbank protection work, (ii) Construction of flood embankment,
- (iii) drainage regulators,
- (iv) strengthening of underwater riverbank protection works.

The structural measures are:

- (i) 30 km of riverbank protection with innovative technologies, combined with nature-based solutions for channel closure;
- (ii) 7.9 km of climate-resilient flood embankment;
- (iii) a distributary offtake structure;
- (iv) 2 regulators to improve drainage and river-floodplain connectivity; and
- (v) 40 km of strengthening of underwater riverbank protection works following the adaptive approach and 6 km of emergency works.. Figure 1.1 shows the locations of interventions of Project 2.

1.3 Overall Objectives

Main objectives of Project 2 are:

- sustain economic growth, poverty reduction and livelihoods of people (about 11,00,000), living in the areas threatened by riverbank erosion along the Jamuna and Padma Rivers;
- enhance resilience to flood and riverbank erosion risks through improvement of

² Project or Tranche 1 was completed with these broad objectives (i) improve livelihood of people in the project area; (ii) enhance resilience to flood and riverbank erosion risks through improvement of infrastructure, strengthening of institutional capacity and update & expansion of the knowledge base; and (iii) establish integrated non-structural and structural risk management measures at priority subprojects and address their sustainability.

infrastructures strengthening the flood and riverbank erosion management system, including the knowledge base and concerned institutions

- establish integrated non-structural and structural flood and riverbank erosion risk management measures (by establishing 160 community-based disaster management units (minimum of 35% women-led) and developing their capacity; (ii) training 40 disaster units (14 units out of 40 led by women) created under Project 1 to enhance sustainability; (iii) raising awareness on FRERM; and (iv) strengthening disaster preparedness and emergency response with a focus on women participation)

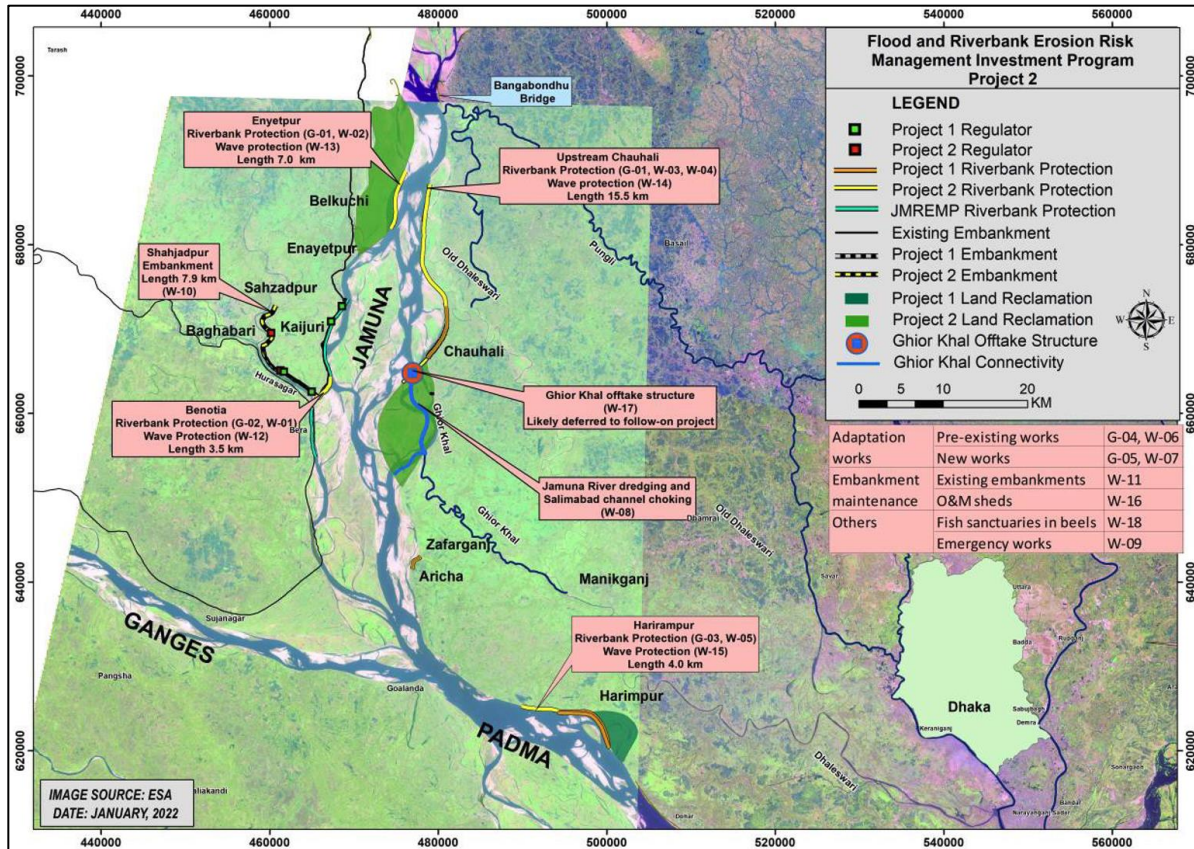


Figure 1.1. Location of Interventions of Project 2

1.4 Categorization

Environmental Category as per ADB Safeguard Policy Statement 2009:

The project is classified as category A in accordance with classification system of SPS of ADB. The EIA including an EMP was disclosed on ADB's website on 6 August 2020. The category classification is triggered as without mitigation, direct impact of Project 2 interventions on biodiversity habitat could be significant, long lasting and cumulative. Likely significant negative impacts of the project 2 interventions include (i) loss of 15 km of channel whose outer riverbank is being severely eroded (ii) damage to adjacent wetland resulting from reclamation of char land and (iii) risks on wildlife habitat due to alteration to flow pattern, reduced river and floodplain connectivity.

Environmental Category as per National laws and Regulations: Bangladesh Environmental Conservation Rules, 1997 classified the Project as “Red”. Schedule-1 of Bangladesh Environment conservation Rules, 1997 classified the Construction/reconstruction/expansion of flood control embankment, polder, dike, etc. projects under Red category (Sl. No. 66)

1.5 Project Safeguards Team

Table 1. List of project safeguard personnel

Name	Designation	Email Address	Contact Number
PMO			
PMO-FRERMIP, BWDB, Dhaka			
Engr. Md. Sultan Mahmud	Executive Engineer	xenfrermip.bwdb@gmail.com	01726-880044
K. M. Saki Ingil	Assistant Engineer	ae2frermip.bwdb@gmail.com	01318-235131
Sub-project Management Office (SMO)			
SMO- Tangail O&M Division, BWDB, Tangail			
Engr. Md. Shazzad Hossain	Executive Engineer	xenbwdbtang@gmail.com	01318-236118
Engr. Md. Imdadul Haque	Sub-Divisional Engineer	sde2tangail2020@gmail.com	01732-807626
SMO- Manikganj WD Division, BWDB, Manikganj			
Engr. Md. Mayen Uddin	Executive Engineer	xn.manikganj@yahoo.com	01318-236100
Mr. Md. Zahidul Islam	Sub-Divisional Engineer	-	01727-935256
SMO- Construction Division, FRERMIP, BWDB, Koitola, Bera, Pabna			
Engr. Md. Mahbubur Rahman	Executive Engineer (Addl. Charge)	xen.koitala@gmail.com	01318-235246
Md. Shaheen Reza	Sub-Divisional Engineer	-	01722-368077

1.6 Context of the Monitoring Report

The Semi-annual EMR was prepared submitted regularly even though there is no work. The works of Project 2 are yet to start, only pre-construction activities are included in this monitoring report. The concerned staff from PMO and ISPMC will monitor, supervise, and recommend the activities of EMP implementation during the project implementation period.

As part of its responsibility, PMO is to establish and operate a Grievance Redress Mechanism (GRM) in each project site. The PMO, with the help of the ISPMC, will monitor proper functioning of the GRM during the project period. A grievance collection box for the workers and local people should be kept at each working site till end of the MFF period, which may be disclosed to the surrounding area.

The PMO is responsible for preparing and submitting monitoring report semiannually to ADB with follow-up action of the findings of the previous EMR. The monitoring requirement includes EMP monitoring, environmental awareness training, environmental health and safety compliance, loan covenant compliances, corrective action plan etc. The semiannual EMR have to be submitted every 31st of January (for July to December of previous year) and 31st of July (for January to June of the year). For this 1st EMR of Project 2, the report covers reporting period of April to December 2022. The effectivity of Project 2 was on April 2022, when this is the start of reporting period. The preparation, submission and disclosure of semiannual EMRs will be until project completion is issued by ADB.

1.7 Overall Project and Sub-projects Progress and Status

BWDB under the Ministry of Water Resources (MoWR) has implemented the Tranche 1 FRERMIP covering parts of the main rivers in Bangladesh. GoB, ADB and Government of the Netherlands (GoN) are the financial contributors to the project. The FRERMIP was planned for three individual loans (or three projects), planned to be implemented with overlapping projects periods, building on each other. The Project 2 includes the following activities with locations

Table 2: Work Packages - location and activities (subject to changes following the morphological development of the rivers)

Name of Work/ Package Number	Name of Contractor	Location	Working Length (km)	Type of Activities and Status
Underwater riverbank protection work with geotextile bags at Benotia (Package No. W- 01/2021-22)	Golam Rabbani Construction Ltd	Upazila- Shahjadpur Dist. Sirajganj	3.50 km	Main Contract activities are establishment and clearance of work sites and workers' camps, sand mining, transport of sand to filling areas, filling and dumping of sand filled geo-bags on/from barges; etc. Yet to start physical

Name of Work/ Package Number	Name of Contractor	Location	Working Length (km)	Type of Activities and Status
				works
Underwater riverbank protection work with geotextile bags at Enayetpur (Package No. W- 02/2021-22)	Golam Rabbani Construction Ltd	Upazila-Belkuchi Dist. Sirajganj	7.00 km	-Do-
Underwater riverbank protection with geotextile bags at Upstream Chauhali (Package No. W-03/ 2021-22)	KCEL- BECL - JV	Upazila- Chauhali Dist.- Sirajgonj	7.50 km	-Do-
Underwater riverbank protection at Upstream Chauhali - 8.00 km with geobags, including 1.00 km of dredging on the underwater slope (Package No. W-04/ 2021-22)	MBEL – BECL JV	Upazila- Chauhali Dist.- Sirajgonj	8.00 km	Main Contract activities are establishment and clearance of work sites and workers' camps, sand mining, transport of sand to filling areas, filling and dumping of sand filled geo-bags on/from barges; dredging work, dumping of dredged materials and it's management etc. Yet to start physical work
Underwater riverbank protection with geotextile bags extension at Harirampur- 4.00 km	JV. Md Jamil Iqbal – Sk Emdadul Haque Al Mamun	Upazila- Harirumpur Dist.- Manikganj	4.00 km	Main Contract activities are establishment and clearance of work sites and workers' camps, sand mining, transport of sand to filling areas, filling and dumping of

Name of Work/ Package Number	Name of Contractor	Location	Working Length (km)	Type of Activities and Status
(Package No. W-05/ 2021-22)				sand filled geo-bags on/from barges; etc. Yet to start physical work
Adaptation works for riverbank protection with geotextile bags of completed work under JMREMP & FRERMIP Tranche1 Project. (Package No. W- 06/2021-22)	Tender not advertised	Upazila- Shahjadpur, Chauhali & Bera Dist. Sirajgang & Pabna	17.00 km	-Do-
Emergency works (Package No. W- 09/2021-2022)	-Do-	-D0-		-Do-
Shahjadpur Embankment Construction from chainage 21,39 to 29.20 (7.9 km) W-10/2021-2022	-D0-	Upazila- Shahjadpur Dist. Sirajgang	7.9 Km	Main Contract activities are establishment and clearance of work sites and workers' camps. Construction of embankment by dredging. Carrying of earth for clay blanked. Turfing work etc.
Maintenance works for 21.30 km Tranche 1 Embankment (Package No. W- 11/2021-2022)	-Do-	Upazila- Shahjadpur Dist. Sirajgong	To be determined	Main Contract activities are establishment and clearance of work sites and workers' camps, earthwork, Yet to start physical work

1.8. Package-wise description and status of implementation (preliminary, detailed, design, on-going construction, completed and/or O&M stage)

Table 3. Status of project implementation

Package No.	Components/List of Work	Status of Implementation (Preliminary Design/Detailed Design/Ongoing Construction/Completed/O&M)	Contract Status (specify if bidding under or contract awarded)
W-01/ 2021-22	Underwater riverbank protection work	Detailed design complete Construction work yet to start	Notification of award issued
W-02/ 2021-22			
W-03/ 2021-22			
W-04/ 2021-22			
W-05/ 2021-22			
W-06/ 2021-22	Adaptation works for riverbank protection of completed work under JMREMP & FRERMIP Tranche1.	Detailed design yet to complete Construction work yet to start	Preparatory work for tendering is ongoing
W-09/2021-2022)	Emergency works		
W-10/2021-2022	Shahjadpur Embankment Construction from chainage 21,39 to 29.20 (7.9 km)		
W-11/2021-2022)	Maintenance works for 21.30 km Tranche 1 Embankment		

2. COMPLIANCE STATUS WITH NATIONAL STATUTORY ENVIRONMENTAL REQUIREMENTS

Table 4: Compliance status with national environmental requirements

Project Name	Statutory Environmental Requirement	Status of Compliance	Validity (if Obtained)	Action Required	Specific conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish
Flood and Riverbank Erosion Risk Management Investment Program (Project 2)	Approval of EIA and Environmental Clearance	EIA approved and Environmental Clearance obtained	Valid up to 12.12.2022 Necessary step has been taken for taking clearance for next one year	-	n/a

3. COMPLIANCE STATUS WITH ENVIRONMENTAL LOAN COVENANTS

Table 5: Compliance status with environment safeguards covenants in the loan agreement

Schedule No. and Paragraph No.	Covenant	Status of Compliance	Action required
Para. 7, Schedule 4	The Borrower shall ensure, or cause BWDB to ensure, that no Works contract is awarded which involves environmental impacts until: (a) The Department of Environment, under the Ministry of Environment and Forest, has granted final approval of the EIA; and (b) BWDB has incorporated the relevant provisions from the EMP into the Works contract	Complied Being complied	

Schedule No. and Paragraph No.	Covenant	Status of Compliance	Action required
Para. 8, Schedule 4	The Borrower shall ensure, or cause BWDB to ensure, that no works contract is awarded which involves involuntary resettlement impacts until the Borrower has caused BWDB to prepare and submit to ADB the final version of the relevant RP based on the detailed design for the activities to be implemented in the relevant Subproject area, and obtained ABD's clearance of such RP	To be complied	Engagement of RP-INGO
Para. 13, Schedule 4	The Borrower and BWDB shall ensure that the preparation, design, construction, implementation, operation and decommissioning of all project's facilities comply with (a) all applicable laws and regulations of the Borrower relating to environment, health, and safety; (b) the Environmental Safeguards; (c) the EARF; and (d) all measures and requirements set forth in the respective EIA and EMP, and any corrective or preventive actions set forth in a Safeguards Monitoring Report.	Being complied (Planning and design done complying this)	Ensuring these during implementation
Para. 17, Schedule 4	The Borrower and BWDB shall make available the necessary budgetary and human resources to fully implement the EMPs and the RPs.	Complied	-
Para. 18, Schedule 4	The Borrower shall ensure, or cause BWDB to ensure, that all bidding documents and contracts for Works contain provisions that require contractors to:		
	(a) comply with the measures and requirements relevant to the contractor set forth in the relevant EIA, EMP and RP (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set out in a Safeguards Monitoring Report;	Complied	-
	(b) make available a budget for all such environmental and social measures;	Complied	-

Schedule No. and Paragraph No.	Covenant	Status of Compliance	Action required
	(c) provide BWDB with a written notice of any unanticipated environmental, resettlement or indigenous peoples risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the relevant EIA, EMP or RP;	To be complied as and when arise	-
	(d) adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction; and	To be complied as and when required	-
	(e) fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.	To be complied when required	-
Para. 19, Schedule 4	The Borrower shall, or cause BWDB to, do the following: (a) Submit semi-annual Safeguard Monitoring Reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission (b) If any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the relevant EIA, EMP or RP, promptly inform ADB of the concurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; (c) No later than 6 months after effectiveness, the Borrower and BWDB shall engage qualified and experience external experts or qualified NGOs under a selection process and terms of reference acceptable to ADB, to verify information produced through the Project monitoring process in respect of (i) land acquisition and involuntary resettlement, and (ii) environmental impacts (if it is determined that the Project will have significant impacts) and facilitate the carrying out of any verification activities related to (i) land acquisition and involuntary resettlement (ii) environmental impacts by such external experts. (d) Report any actual or potential breach of	Being Complied To be Complied as and when arise Necessary arrangement is being taken for compliance	-

Schedule No. and Paragraph No.	Covenant	Status of Compliance	Action required
	compliance with measures and requirements set forth in an EMP or RP promptly after becoming aware of the breach	To be Complied when arise	
Para. 21, Schedule 4	The Borrower shall ensure, or cause BWDB shall to ensure, that the core labor standards and the Borrower's applicable laws and regulations are complied with during Project implementation. The Borrower shall cause BWDB to include specific provisions in the bidding promptly and contracts finance by ADB under the Project requiring that the contractors, among other things: (a) comply with the Borrower's applicable; labour law and regulations and incorporate applicable workplace occupational safety norms; (b) do not use child labor; (c) do not discriminate workers in respect of employment and occupation; (d) do not use forced labor; (e) allow freedom of association and effectively recognize the right to collective bargaining; and (f) disseminate, or engage appropriate service providers to disseminate, information on the risks of sexually transmitted diseases including HIV/AIDS, to the employees of contractors engaged under the Project and to members of the local communities surrounding the Project area, particularly women.	Being complied	-
Para. 23, Schedule 4	The borrower shall ensure, or cause BWDB to ensure, that (a) the GAP is implemented in accordance with terms; (b) the bidding documents and the contracts include relevant provisions for contractors to comply with the measures set forth in the GAP, (c) adequate resources are allocated for implementation of the GAP and (d) process of implementation of the GAP, including progress toward achieving key gender outcome and output targets, are regularly monitored and reported to ADB	Being complied	

4. COMPLIANCE STATUS WITH THE ENVIRONMENTAL MANAGEMENT PLAN

In addition to the environmental management specialist of the ISPMC, The focal person on environmental issues from PMO, and site officials from SMOs are supervising of site developments, and monitoring environmental measures and any issues. The physical work of Tranche 1 completed on March 2020, since then post construction, monitoring was conducted by PMO and SMO and Semi-Annual EMR was submitted regularly to ADB for maintaining continuity of the MFF project. The ISPMC is visiting sites, and submitting the reports for monitoring of EMP compliance as per direction of PMO up to the contract period of June 2020 and guidance from ADB.

The technology and area of Project 2 are same as of Tranche 1. The bidding process of the packages is almost complete, and the physical work of Project 2 will be started soon, hopefully in February 2023. As such, there was no physical work for the new project during the reporting period of this Semi-annual report, only pre-construction monitoring and its mitigations have been included in this report.

Table 6: Pre-construction environmental monitoring activities with mitigation measures for Project 2.

IEC	Location	Impacts	Recommended Mitigation Measures
Sub-Project JRB-1			
Air quality	Possible locations of labor shed (Benotia & Enayetpur mauzas); stock yard (to be selected by the Engineer in Charge) and site for filling of geo-textile bags with sand Roadside places used for transportation of materials	Minor impact may occur from the small amount of dust generated due to movement of vehicles, construction materials and machineries; construction of labor shed and stock yard.	Construction materials should be covered with thick materials (i.e. polythene) during transportation to resist the generation of dust. Water to be sprinkled to control the generation and spreading of dust; as and where required.
Noise	Possible locations of labor shed (Benotia & Enayetpur mauzas); stock yard (to be selected by the Engineer in Charge) and site for filling of geo-textile bags with sand	Low impacts caused due to noise generation for mobilization of construction materials and construction of labor shed, stockyard of sand.	Noise levels due to vehicular movement are to be kept within permissible limit. Construction camps, labor shed, are to be located far away from settlements.

IEC	Location	Impacts	Recommended Mitigation Measures
Land loss	Possible locations of labor shed (Benotia, Enayetpur, Chauhali & Harirampur); stock yard (to be selected by the Engineer in Charge) and site for filling of geo-textile bags with sand	Temporary loss of land may take place due to construction of labor camp, stockyard of sand and filling yard of geo-textile bags.	Labor shed should preferably be constructed on fallow or khas land. Landowners affected by the construction of labor shed and placement of filling materials on agriculture land should be noticed ahead of time so that the area might not be affected for growing crops. Labor sheds, and other project related activities should be optimized with the purpose of minimum disruption to cultivable lands and standing crops. Adequate cash compensation should be provided to the land owners/share croppers. The compensation should be determined based on the amount of land temporarily going out of cultivation.
Agriculture Resources Fisheries Resources Ecological Resources	The proposed working area of JRB- 1, JLB-2 & PLB-1	There would be no impact during the pre-construction phase	
Gender Issues	The proposed work area of JRB-1, JLB-2 & PLB-1	Labor mobilization may create disturbance for the local women.	The labor mobilization activities should be strictly followed up by the contractors.
Public Health	The proposed work area of JRB-1, JLB-2 & PLB-1	Because of having limited access to toilet, unhygienic environment due huge gathering of labors can create disturbance to health	Labor shed should establish near to bazaar areas and also ring slab water-sealed sanitary latrines should be established in each shed

5. APPROACH AND METHODOLOGY FOR ENVIRONMENTAL MONITORING OF THE PROJECT

The focal person for environmental safeguards from PMO and site officials from SMOs are regularly monitoring the environmental issues during their regular site visits. PMO regularly submitted semi-annual EMR to ADB even after completion of physical works conducting post construction monitoring. The ISPMC team have been mobilized on 22 August 2022, they are supporting PMO on environmental safeguards since then.

6. MONITORING OF ENVIRONMENTAL IMPACTS ON PROJECT SURROUNDINGS (AMBIENT AIR, WATER QUALITY AND NOISE LEVEL) FOR PROJECT 1

Air Quality Results

As all the construction work completed in June 2020, there was no significant change in ambient air in the project surroundings, so air quality test was not performed.

Water Quality Results

As all the construction work completed in June 2020, it seemed like no significant change in water quality in the project surroundings, so water quality test was not performed

Noise Quality Results

As all the construction work completed in June 2020, there was no significant impact of noise in the project surroundings and project work was done during the daytime only. According to the Contractor and public discussion, there were no complaints about (too) high noise levels. Thus, air quality test was not performed.

7. SUMMARY OF KEY ISSUES AND REMEDIAL ACTIONS

The setback distance of Jamuna River and FRERMIP embankment at the chainage of km 9.00 of District-Sirajganj, Upazila- Shahzadpur, Place- Gala, is less than 20 m. Massive erosion is occurring along the right bank of Jamuna River at that place, which need immediate action to stop this erosion and stable the bank line. Riverbank protection work may be included under emergency work for 21.30 km of Tranche 1 embankment in the Project 2 which will hopefully save the embankment.

Extension of Kaijuri Embankment (7.9 km) is urgent to protect the JRB-1 from extreme flooding during monsoon. Without this rest 7.9 km of planned 29 km FRERMIP Embankment, completed 21.3 km embankment will not come in use for flood control for this sub-project area. Construction of this 7.9 km is included in Project 2.

Project 2 includes establishment of river and flood plain fish sanctuaries, which will enhance the fish biodiversity in the Project area. EIA also mentioned to establish at least one bird sanctuary in the potential location along the bank of lower Jamuna and Padma. A consulting firm will be engaged in Project 2 for providing expertise opinion for smooth implementation and management of both fish and bird sanctuaries. The bidding process has not started yet so that the implementation of the fish and bird sanctuary may not be possible during the next dry season.

The terms of reference of three consultancy packages viz. Environment/biodiversity and social baseline impact monitoring and fisheries study (C-15), External monitoring of environmental safeguard (C-18) and Individual Environmental Specialist for PMO (C-24) has been prepared and EOI will be advertised these consultancy packages are expected to start during the following reporting period.

8. RECOMMENDATION AND CONCLUSION

All the FRERMIP (Tranche 1) packages are completed in June 2020. The physical work of Project 2 is about to start. Based on lessons learned of the project, the site specific EMPs should carefully address environmental mitigation measures to assure their implementation as per standard.

A single GRM will ensure that the affected people's concerns and grievances on the project's environmental and social issues are receive. As Project 2 have the same area of Project 1, the GRM established in Project 1 will also work in Project 2. PMO and main consultant ISPMC should take about proper functioning of the GRM till the project period. A grievance collection box for the workers and local people should be kept at each working site until the end of the MFF period, which may be disclosed to the surrounding area.

Site-specific EMPs should be prepared by each of the contractor based on the EMP prepared for the Project.

It remains necessary to confirm that the Project remains alert and could take adequate precautionary measures to identify, prevent, and minimize the spread of COVID-19. This includes enhancement of awareness of workforce, training of medical staff on COVID- 19, establishing isolation & quarantine facilities, dealing with COVID positive patients, transportation of sick person to local or other medical services etc.

Training on Environmental monitoring, Environmental health and safety compliance, international law and concerned compliance to concerned safeguard personnel working in PMO and SMOs and construction contractor should be conducted frequently.



Government of the People's Republic of Bangladesh
Department of Environment
Paribesh Bhaban, E/16 Agargaon,
Sher-e-Bangla Nagar Dhaka-1207
www.doe.gov.bd

Conditions for Renewal of Environmental Clearance Certificate

Clearance No:22.02.0000.018.72.084.20-20

Conditions for Renewal of Environmental Clearance Certificate is awarded to the following industrial unit/project with a precondition to ensuring environment management and compliance of the conditions attached herewith:

Name of industrial unit or project: : Flood and Riverbank Erosion Risk Management Investment Program (Project-2)
Entrepreneur's Name: : Md. Rafiqul Islam Choubey (Project coordinating Director)
Identification No: : 110548
Product: : Construction/reconstruction/expansion of flood control embankment, polder, dike, etc.
Category: : Red
Address: : 72 Green Road, Pani Bhaban, Dhaka-1205.
Issue date: : 01/03/2022
Expiry date: : 12/12/2022



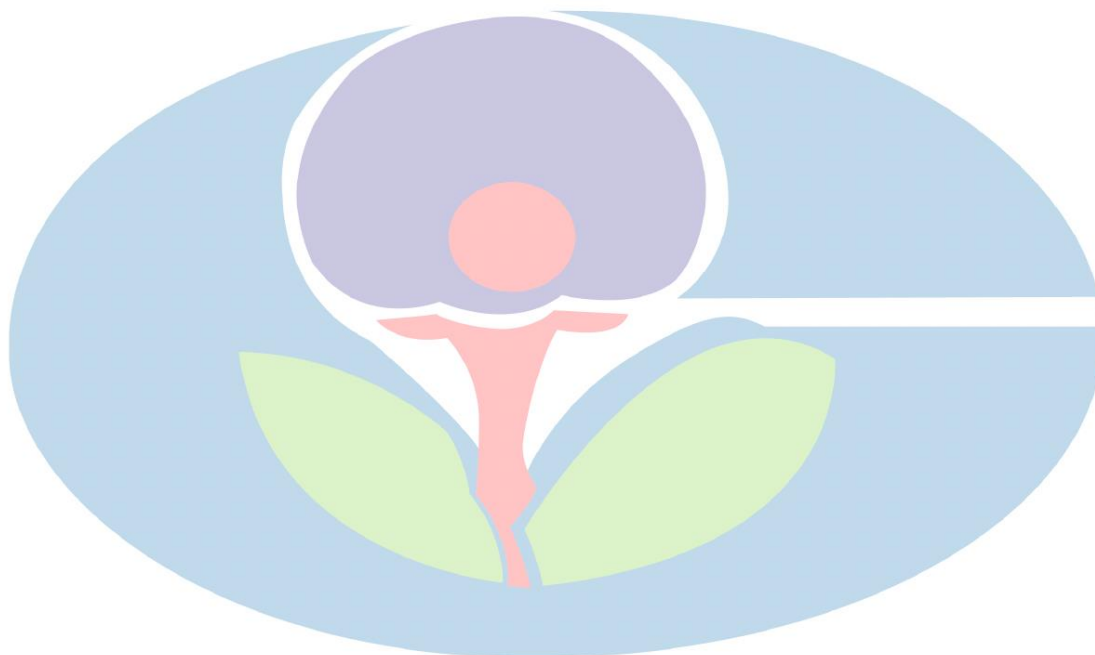
For verification of the certificate, please visit: https://ecc.doe.gov.bd/certificate_verification

Page 1 of 3

Identification No: 110548 Flood and Riverbank Erosion Risk Management Investment Program
(Project-2) Clearance No:22.02.0000.018.72.084.20-20

The conditions attached herewith are to be complied strictly, otherwise, the certificate will be canceled / subject to compensation to be undertaken any other legal action:

N.B: This is a system generated certificate and requires no signature:



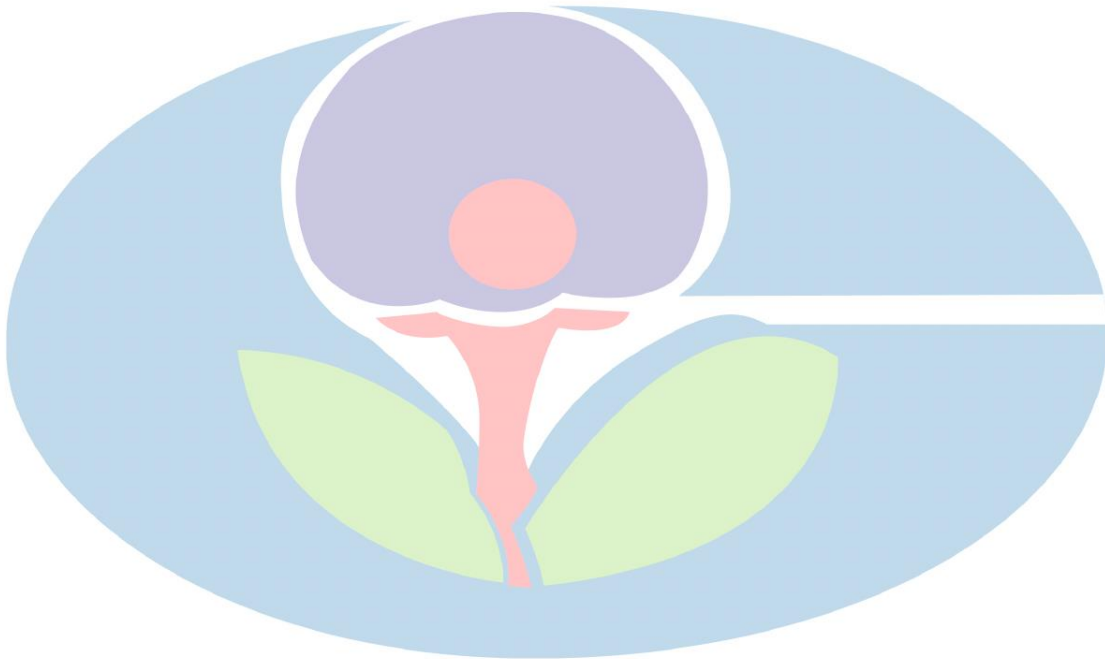
For verification of the certificate, please visit: https://ecc.doe.gov.bd/certificate_verification

Page 2 of 3

Identification No: 110548 Flood and Riverbank Erosion Risk Management Investment Program
(Project-2) Clearance No:22.02.0000.018.72.084.20-20

Conditions for Renewal of Environmental Clearance Certificate of Conditions:

- 1 . The Environmental Clearance Certificate of Flood and Riverbank Erosion Risk Management Investment Program (Project-2) under BWDB subject to fulfilling the terms and conditions as stated in the Environmental Clearance Certificate of renewal of the above project issued on 13.12.2020 vide memo no. 22.02.0000.018.72.084.20-321 shall remain valid for the renewed period.
- 2 . An application for further renewal along with a) the renewal fees (as per the ECR, 1997) b) VAT on renewal fees (in separate Treasury Chalan) and c) all associated documents shall be submitted to Head Office at least 30 days ahead of expiry date.



For verification of the certificate, please visit: https://ecc.doe.gov.bd/certificate_verification

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: 22.02.0000.18.72.084.20 - 34

Date: 13/12/2020

Subject: Environmental Clearance Certificate for Flood and Riverbank Erosion Risk Management Investment Program (Project-2).

Ref: Your application dated 17/09/2020 and 18/11/2020.

With reference to the above, the undersigned is directed to convey the approval of Environmental Impact Assessment (EIA) as well as Environmental Clearance for Flood and Riverbank Erosion Risk Management Investment Program (Project-2).

A copy of the said Environmental Clearance Certificate is attached herewith for your kind information and necessary action at your end.



13.12.2020

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

Project Director

Flood and Riverbank Erosion Risk Management Investment Program (Project-2)
Bangladesh Water Development Board (BWDB)
Firoz Tower (12th floor), 152/3/B, Bir Uttam Kazi Nuruzzaman Road
Panthopath, Dhaka-1205.

Copy Forwarded to :

- 1) PS to the Hon'ble Secretary, Ministry of Environment, Forest and Climate Change, Bangladesh Secretariat, Dhaka.
- 2) Director, Department of Environment, Dhaka Regional/Rajshahi Divisional Office, Dhaka/Bogura.
- 3) Assistant Director, Office of the Director General, Department of Environment, Head Office, Dhaka.

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

Environmental Clearance Certificate

Section 12(1) of the Environment Conservation Act, 1995 (Amended 2010)

Clearance Certificate Number: 321

File number: 22.02.0000.18.72.084.20-321

Clearance Certificate Issue Date: 13 December, 2020

Renewal date not later than: 12 December, 2021

A. Clearance Certificate Type

Environmental Clearance Certificate

B. Clearance Certificate Holder

Project Director

Flood and Riverbank Erosion Risk Management Investment Program (Project-2)
Bangladesh Water Development Board (BWDB)
Firoz Tower (12th floor), 152/3/B, Bir Uttam Kazi Nuruzzaman Road
Panthopath, Dhaka-1205.

C. Premises to which this Clearance Certificate Applies

The Project area of the proposed investment encompasses the river reach of the Jamuna River From South of the Jamuna Bridge and the proposed Ganges Barrage site to Chandpur on the Lower Meghna. This Project comprises the three priority subprojects, JRB-1, JLB-2 and PLB-1 which extend over (part of) the following districts: Sirajganj, Tangail, Pabna and Manikganj.

D. Activities for which this Clearance Certificate Authorizes and Regulates

- a. River Bank Protection works - 30 km.
- b. Flood Protection Embankment works- 48 km.
- c. Fish Pases/Regulators-10 nos.
- d. Adaptation Works-40 km.
- e. Emergency works-3 km.
- f. Land Recovery Works-6,000 ha (apprx).

E. Terms and Conditions for Environmental Clearance Certificate

1. **Limit Condition for Discharges to Air and Water:** The Environmental Clearance Certificate must comply with schedule 2 and 10, rule 12 of the Environment Conservation Rules, 1997.



2. **Noise Limit:** The Environmental Clearance Certificate must comply with the Noise Pollution (Control) Rules, 2006

In case of non-coverage of ECR 1997, the World Bank Environment, Health and Safety Guideline shall be adhered to.

3. Operating Conditions:

- 3.1 Activities must be carried out in a competent manner. This includes:
- (a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
 - (b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.
- 3.2 All plants and equipments installed at the premises or used in connection with the Environmental Clearance activity:
- (a) must be maintained in a proper and efficient condition; and
 - (b) must be operated in a proper and efficient manner.
- 3.3 Construction works shall be restricted to day time hours so as to avoid/mitigate the disturbance of local lives as well as implementation schedules of the works shall be notified in advance to nearby residents.
- 3.4 Storage area for chemicals and other construction materials shall be carefully selected to avoid disturbance of the natural drainage. To avoid soil contamination at labour camp and work-site chemical, cement and petroleum derivatives shall be handled cautiously.
- 3.5 Sufficient number of culverts, bridges, sluice and other drainage/inlet facilities shall be installed properly to ensure sufficient cross drainage capacity.
- 3.6 During site preparation, piling work, construction/re-construction of land embankments, regulators, approach roads and temporary access roads, top soil shall be kept aside and shall be restored after completion of the said activities.
- 3.7 The open areas that are grasslands can be used for construction but with appropriate safeguards to maintain material and dump sites from contaminating river waters.
- 3.8 This shall be ensured that soil is not obtained from agricultural land and it should be obtained nearby river/khal/beel areas, which are free of invasive plants. The construction equipment and vehicles shall be cleaned regularly.
- 3.9 Re-vegetation and replanting shall be undertaken if rehabilitation works involve extensive vegetation clearance.
- 3.10 Vegetation clearance shall be minimizing at the construction phase as to minimize soil erosion. Soils for embankments shall be properly tested and compacted to ensure stability.
- 3.11 Soil erosion caused by removal of vegetative cover and excavated loose soil shall be checked by adequate protective works and plantation with local vegetation as soon as possible; loose soil shall be covered and stored away from the edge of the sea/river.
- 3.12 Proper construction practices shall be followed that minimize loss of habitats and fish breeding, feeding and nursery sites.
- 3.13 Necessary steps shall be taken to protect flooding of local areas due to restricted flow at the project sites.
- 3.14 Proper and adequate sanitation facilities shall be ensured in labor camps throughout the proposed project period.



- 3.15 In order to control noise pollution, vehicles & equipment shall be maintained regularly; working during sensitive hours and locating machinery close to sensitive receptor shall be avoided.
- 3.16 No solid waste can be burnt in the project area. An environment friendly solid waste management should be in place during whole the period of the project in the field.
- 3.17 Proper and adequate on-site precautionary measures and safety measures shall be ensured so that no habitat of any flora and fauna would be demolished or destructed.
- 3.18 Any heritage site, ecological critical area and other environmentally and/or religious sensitive places shall be avoided during project construction phase.
- 3.19 To control dust vehicles and equipment to be used for this project shall be maintained properly, water trucks shall be used, stockpiles to be located away from sensitive receptors and vehicle speed limits shall be enforced.
- 3.20 Resettlement plan should be properly implemented and people should be adequately compensated, where necessary.
- 3.21 Climate Change effects and maximum storm surge height shall have to consider at the design phase.
- 3.22 Construction material should be properly disposed off after the construction work is over.
- 3.23 Appropriate permission would be required to obtain from the forest department in favor of cutting/felling of any plant/tree/sapling forested by any individual or government before doing such type of activity.
- 3.24 The mitigation measures described in the Environmental Management Plan (EMP) report along with the emergency response plan included in the EIA report shall strictly be implemented and kept functioning on a continuous basis.

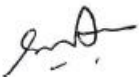
4.1 Monitoring and Recording Conditions:

- 4.1.1 The results of any monitoring required to be conducted by this Clearance Certificate must be recorded.
- 4.1.2 The following records must be kept in respect of any samples required to be collected for the purposes of this Clearance Certificate:
 - (a) the date(s) on which the sample was taken;
 - (b) the time(s) at which the sample was collected;
 - (c) the point at which the sample was taken; and
 - (d) the name of the person who collected the sample.

4.2 Requirement to Monitor Concentration of Pollutants Discharged

For each monitoring, the Clearance Certificate holder must monitor (by sampling and obtaining results by analysis) the following parameter: water flow, water quality, air quality, noise, the surrounding areas for spread of invasive species, the changes in aquatic habitats before, during and after construction, fish catch during and after construction.

- 5. **Reporting Conditions:** Environmental Monitoring Reports shall be made available simultaneously to Head quarters, Dhaka Regional and Rajshahi



Divisional office of the Department of Environment on a quarterly basis during the whole period of the project.

6. **Notification of environmental harm:** The Clearance Certificate holder or its employees must notify the Department of Environment of incidents causing or threatening material harm to the environment as soon as practicable after the person becomes aware of the incident.

F. RECORDING OF POLLUTION CONTROL:

The certificate holder must keep a legible record of all complaints made to the certificate holder or any employee or agent of the certificate holder in relation to pollution arising from any activity to which this Environmental Certificate applies. The record must include details of the following:

- (a) the date and time complaint;
- (b) the method by which the complaint was made;
- (c) any personal details of the complaint which were provided by the complaint or, if no such details were provided, a note to that effect;
- (d) the nature of the complaint;
- (e) the action taken by the certificate holder in relation to the complaint, including any follow-up contact with the complaint; and
- (f) if no action was taken by the certificate holder, the reasons why no action was taken.

The record of a complaint must be kept for at least 4 (four) years after the complaint was made. The record must be produced to any authorized officer of the DoE who asks to see them.

G. VALIDITY OF THE CLEARANCE CERTIFICATE:

This Environmental Clearance is valid for one year from the date of issuance and the Project authority shall apply for renewal to the Head Office of DOE with a copy to the Dhaka Regional and Rajshahi Divisional Office of DOE at least 30 (thirty) days ahead of expiry.

Violation of any of the above conditions shall render this clearance void.

This Environmental Clearance Certificate has been issued with the approval of the appropriate authority.



13.12.2020

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