

**GOVERNMENT OF THE PEOPLE’S REPUBLIC OF BANGLADESH**

**Ministry of Local Government, Rural Development and Cooperatives**

**Local Government Division**

**Local Government Engineering Department**



**Fourth Primary Education Development Program (PEDP4)**

**Revised Environmental Management Report**

**July2018- December2019**

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## Abbreviations and Acronyms

<b>ADB</b>	Asian Development Bank
<b>BEMR</b>	Biannual Environmental Management Report
<b>DPE</b>	Directorate of Primary Education
<b>ECC</b>	Environmental Clearance Certificate
<b>EIA</b>	Environmental Impact Assessment
<b>EMP</b>	Environmental Management Plan
<b>EMF</b>	Environmental Management Framework
<b>GOB</b>	Government of Bangladesh
<b>GPS</b>	Government Primary School
<b>IEE</b>	Initial Environmental Examination
<b>JARM</b>	Joint Annual Review Mission
<b>LGED</b>	Local Government Engineering Department
<b>MLGRD&amp;C</b>	Ministry of Local Government, Rural Development and Cooperatives
<b>MoPME</b>	Ministry of Primary and Mass Education
<b>PEIMS</b>	Primary Education Infrastructure Management System
<b>PEDP4</b>	Fourth Primary Education Development Program
<b>SAE</b>	Sub-Assistant Engineer
<b>SE</b>	Superintending Engineer
<b>SMC</b>	School Management Committee
<b>UE</b>	Upazilla Engineer
<b>WB</b>	The World Bank
<b>EU</b>	European Union
<b>JICA</b>	Japan International Cooperation Agency
<b>UNICEF</b>	United Nation International Children Emergency Fund

## Executive Summary:

The Fourth Primary Education Development Program (PEDP4), a sub-sector wide program of the entire primary education sector has been started from July, 2018 for a period of five years. The Ministry of Primary and Mass Education (MOPME) is responsible for executing the program and the Directorate of Primary Education (DPE) is the implementing agency. The Local Government Engineering Department (LGED) and the Department of Public Health Engineering (DPHE) is the partner implementing agency for need-based infrastructure development and major maintenance.

The PEDP4 has initiated its activities to provide quality primary education which emphasize appropriate infrastructure development and maintenance to ensure child friendly environment and its effective utilisation to achieve the desired results. The purpose of the Environmental Management Report (EMR) is to present the status of safeguard measures taken to mitigate the environmental impacts arisen due to construction of sub-projects under PEDP4.

In PEDP4, forty thousand additional rooms and ten thousand five hundred head teacher rooms including others institutional infrastructures will be constructed under need based infrastructure sub- component. It noted that LGED received a list of schools for construction of additional rooms in September 2019 from MoPME. After having the list, LGED has taken a total 769 sub-projects for construction and expansion of additional rooms and other institutional infrastructures such as PTI, DD and DPEO office respectively during the reporting period(July2018-December2019). This EMR has been prepared based on 769 sub-projects consisting 761 schools and 8 no's other institutional infrastructures.

## Cumulative status of Sub-project

Sl.No.	Type of Sub-project	No. of Sub-project	Type of Sub-project	Does EMP cost included in BOQ	Work Status/ % of completion
1	Construction of additional rooms of School	761	C	EMP cost is included in BOQ	Tendering stage
2	Construction of DD Office	01	C	EMP cost is included in BOQ	Early stage of work
3	Expansion of DPE Office	01	C	EMP cost is included in BOQ	Do
4	Expansion of PTI	06	C	EMP cost is included in BOQ	Do
		769			

The above table presents that all the sub-projects are in category "C" and cost of EMP implementation already included in BOQ. Moreover, it can be seen from the screening

report that 98 % of sub-projects are being extended vertically over existing structure and all the sub-projects under implementation are located in existing compound. Therefore, concern for land use, earth work for foundation and top soil loss will be less and it is likely that the environmental concern will be also minimal. However, in case of horizontal extension for 2% sub-projects proper care to be taken to maximize the benefit of use of this scarce land specially to maintain the good physical environment of campus. In addition of that none of the sub-projects are located in any ecologically protected area and no possibility of negative impact on wet land was also observed. Similarly, no loss of agricultural land was also reported.

On the other hand, there are many positive impacts and environment enhancement will be generated due to sub-projects construction. It is expected that there will be employment generation during the construction phase and as well as in the operation phase of project. The sub-projects would meet the demand of the need of schools/class rooms of the respective areas. The local people should get preference in such cases which would generate opportunities for employment of the local people. Approximately, 30% women will be employed in construction work of the sub- project of school and other infrastructural development under PEDP4.

Monitoring of mitigation measures of environmental impacts are very important during sub-projects construction phase. For monitoring the compliance of the environmental safeguard issues during construction, a monitoring checklist has been developed and the field officers are required to report quarterly at the head quarter. In PEDP4, environmental management cost has been provided for each of the sub-projects which would results a better environmental practice and sustainable infrastructural development.

## **1.INTRODUCTION**

### **1.1. Background**

Primary Education Development Program contributes towards achieving quality education in primary level in Bangladesh. In this course, the Fourth Primary Education Development Program (PEDP4), a sub-sector wide program of the entire primary education sector has started from July, 2018 for a period of five years. The Fourth Primary Education Development Program (PEDP4) is financed by the Government of Bangladesh and five Development Partners (DPs) such as ADB, WB, JICA, EU& UNICEF. The PEDP4 interventions are designed to cover whole country including geographically challenged areas like hilly terrain, waterlogged *haor*, flood prone and coastal areas.

The Ministry of Primary and Mass Education (MOPME) is responsible for executing the program and the Directorate of Primary Education (DPE) is the implementing agency. The Local Government Engineering Department (LGED) and the Department of Public Health Engineering (DPHE) is the partner implementing agency for need-based infrastructure development and major maintenance. The PEDP4 has initiated its activities to provide quality primary education which emphasize appropriate infrastructure development and maintenance to ensure child friendly environment and its effective utilisation to achieve the desired results.

### **1.2. PEDP4 Objectives:**

Overall objective of the PEDP4 is to provide quality primary education for all children of the country from pre-primary up to grade 5 through an efficient, inclusive and equitable education system.

### **1.3. PEDP4 Component**

The PEDP4 has 3 components

- i. Quality
- ii. Equitable Access and Participation
- iii. Management, Governance and Financing.

### **1.4. Type of Sub-projects**

Types of subprojects considered under PEDP4 are as follows:

- (i) Need-based school infrastructure;
- (ii) Primary education field office buildings including DPE HQ, DD Office; DPEO Office; UEO/TEO Office; Cox's Bazar Leadership Training Centre, PTIs & URCs;
- (iii) Office buildings of other institute under MOPME and National Academy for Primary Education (NAPE).

**Table 1: Type of sub-projects and intervention under PEDP4**

Category	Interventions
1. Need Based School Infrastructure	<ul style="list-style-type: none"> <li>a. Additional classrooms ;</li> <li>b. Additional teacher rooms;</li> <li>c. Head Teacher rooms;</li> <li>d. Additional WASH Blocks;</li> <li>e. Safe water sources for drinking;</li> <li>f. Boundary wall;</li> <li>g. Playing items/accessories;</li> <li>i. Maintenance</li> </ul>
2. Primary Education Field Office buildings including DPE HQ e, Cox’s Bazar Leadership Training Centre, PTIs & URCs	<ul style="list-style-type: none"> <li>a. Construction and expansion of DPE HQ including a mosque;</li> <li>b. Vertical extension of DPE central warehouse,</li> <li>c. Expansion/new construction of DD offices;</li> <li>d. Expansion/new construction of DPEO offices;</li> <li>e. Construction and expansion of leadership training center at Cox’s Bazar;</li> <li>f. Expansion/new construction UEO offices;</li> <li>g. Expansion/new construction of URCs;</li> <li>h. PTI infrastructure development.</li> </ul>
3. National academy for primary education (NAPE)	<ul style="list-style-type: none"> <li>a. Land development;</li> <li>b. Boundary wall &amp; gate;</li> <li>c. Trainees’ dormitory building;</li> <li>d. Renovation of DG’s quarter;</li> <li>e. A multi-storied officers’ quarter;</li> <li>f. Guest house renovation;</li> <li>g. DTW &amp; Water Supply Lines;</li> <li>h. Internal roads, walkways and circular jogging track;</li> <li>i. Drainage system;</li> <li>j. Walkway; and</li> <li>k. Generator room.</li> </ul>

### **1.5. Purpose of the EMR**

The purpose of the Environmental Management Report (EMR) is to present the status of safeguard measures to mitigate the environmental impacts arisen due to construction of Sub-projects. The EMR is all about the implementation and monitoring the progress of EMP or environmental safeguard due diligence. More specifically, the EMR provides the updates on the progress of various safeguard measures of the Sub-projects.

### **2. Implication of policies and compliance of the polices**

The relevant policies and legislations emphasize the importance of environmental consideration in the program planning and implementation to promote sustainable development. These provide the general guidelines to integrate environmental issues with different sector projects and programs. The ECR '97 (with amendments later) is the main legislation in Bangladesh. ECR '97 defined different sectors (industries and projects) as 'Green', 'Orange-A', 'Orange-B' and 'Red' categories, without considering the extent and types of interventions. Construction of multi-storied buildings is considered as the 'Orange B' category in ECR'97.

However, there is no fixed definition of a multi-storied high rise building. In practice, building more than 10 storied within Dhaka City (as per Building Construction Rules of RAJUK) and building more than 6-storied building outside Dhaka city is considered as 'Orange B' category. It is likely that the primary schools outside Dhaka city will not be more than 6- storied building and as such, no environmental clearance will be required. However, if new construction more than 6-storied building is considered such as the NAPE dormitory building, Initial Environmental Examination (IEE) and Environmental Management Plan (EMP) would be required to get the environmental clearance from the Department of Environment (DOE) as per ECR'97. In addition, the Environmental Management Framework (EMF) would need to be submitted to the Department of Environment (DOE) for their review and concurrence.

The Bangladesh National Building Code (BNBC) and Bangladesh Labor Act (BLA) underscore certain measures to ensure proper safety and work environment as well as the compensation measures to the laborers. By national law, contractors must follow these safety provisions and compensation arrangements. The implementing agency must ensure that the appropriate occupational health and safety provisions by incorporating in the bidding documents and are being implemented by the contractor properly.

Many primary schools in disaster prone areas are also used as cyclone/flood shelters for the community. If the school will be considered as shelter, the concerned District Committee should be consulted about its location and other information.

The compliance of the polices to be ensured in sub-project implementation so that neither the need based infrastructure at schools/institutions nor the environment is compromised through the program intervention.

### 3. Environmental Management Process of PEDP4

To avoid negative environmental impacts and enhance environmental outcomes of the activities implemented under individual “subprojects”, ADB’s Safeguard Policy Statement (2009) is triggered for PEDP4.

The Environmental Management Processes of PEDP4 are as follows:

- (i) Categorization of the sub-projects;
- (ii) Environmental Screening (Checklist) and preparation of EMP of the sub-projects;
- (iii) Initial Environmental Examination (IEE).

#### 3.1 Categorization of Sub-projects

In general, the environmental categorization identifies what level of environmental assessment is needed for the sub-projects under PEDP4. Considering the large numbers of the “sub-projects”, the PEDP4 proposes a flexible approach for the environmental documentation for different types of the sub-project.

Table-5 provides a guideline for categorization of “sub-projects” that will determine the level of environmental assessment to be required for the PEDP4 sub-projects.

**Table-2:- Categorization of Sub-projects**

NO.	Types/ Interventions of Sub-projects (Details of interventions are given in chapter 3.2)	ADB Category	Environmental Documentation Required
1	Maintenance of school	C	No environmental screening required as these subprojects are likely to have no negative environmental impacts.
2	Vertical and horizontal expansion for new classrooms / reconstruction of school and office buildings/water supply (tube wells (deep tube wells)/sanitary latrines/WASH Blocks facilities etc.	C	Require environmental screening. EMP is required as these subprojects are likely to have minimal environmental impacts.

NO.	Types/ Interventions of Sub-projects (Details of interventions are given in chapter 3.2)	ADB Category	Environmental Documentation Required
3	Construction of new school and Office buildings more than 6 storied (if any).	B	Require an IEE as these subprojects are likely to have potential environmental impacts. Environmental clearance from DOE is required.

#### 4.0. The Sub-projects:

##### 4.1. Sub-project description:

Need-based Infrastructure Development has been incorporated in PEDP4 as Program component named Access and Participation to improve the quality of physical learning and working environment through the construction of additional classrooms, teacher room, head teacher room and other infrastructures. Under PEDP4, 40000 additional rooms for class & teacher and 10500 rooms for head teacher have been targeted for construction. Beside this, 8 Divisional Deputy Director(DD) office, 64 District Primary Education Office(DPEO), 365 Upazila Education Office (UEO)/ Thana Education Office(TEO), 285 Upazila Resource Centre ( URC), 67 Primary Training Institute (PTI) and Dormitory building of National Academy for Primary Education( NAPE) are also planned for construction/expansion under PEDP4 through LGED.

Need based additional class rooms are being constructed to reduce overcrowding in the class room of a school. These are basically of two types, vertical extension and horizontal extension but in few cases combination of both. The architectural plan of the vertical extension is determined considering the existing plan of a building following PEDP4 Planning Guideline.

In such case, capacity assessment of the foundation of the existing building is assessed to find out the feasibility of a vertical extension. In case of horizontal extension, the placement of the new infrastructure is very important to maintain a good school environment considering land scarcity in a densely populated country like Bangladesh. It is noted that the schools are not only buildings but these are associated in many items such as a playground including playing devices which offer better learning opportunities. So it is highly recommended that the possibility of vertical extension should be explored at first so that land can be made available for playground. Only if that seems to be unfeasible, a horizontal extension can be considered.

As DPHE is constructing the WASH blocks in the same school campus in many schools, coordination among the two agencies is extremely important. LGED is constructing school cum cyclone shelters in the cyclone prone areas and school cum flood shelters in the flood prone areas. In such cases, the ground floor of the school is kept open and the class rooms are being built at the 1<sup>st</sup> floor. The ground floors of such buildings are used for various community activities during the normal time. However, the adequate number of toilet and source of drinking water should be carefully designed so that these can meet the demand during the peak use. As most of such schools are located in the saline prone areas where drinking water is already a problem, use of rainwater harvesting should be considered in many such schools.

In addition, a number of additional classroom of schools are also planned to construct in the Chittagong Hill Tracts region where special designs are being prepared considering the norms and culture of the local people, difficulties in carrying construction materials in some of the high and remoter locations and availability of suitable locally available construction materials.

#### 4.2. Scope of Environmental Management Report (EMR):

In PEDP4, forty thousand additional rooms and ten thousand five hundred head teacher rooms including others institutional infrastructures to be constructed under need based infrastructure sub- component.

It can be noted that LGED received a list of schools for construction of additional rooms in September 2019 from MoPME. After having the list, LGED has taken a total 769 sub-projects for construction and expansion of additional rooms and other institutional infrastructures such as PTI, DD and DPEO office respectively during the reporting period. This Environmental Management Report has been prepared based on 769 sub-projects consisting 761 schools and 8 no's other institutional infrastructures. The cumulative physical status of Sub-projects can be seen in Table 3 presented below.

**Table 3: Cumulative physical status of Sub-projects**

Sl.No.	Type of Sub-project	No. of Sub-project	Work Status/ % of completion
1	Construction of additional class rooms of School	761	Tendering stage
2	Construction of DD Office	01	Early stage of work
3	Expansion of DPE Office	01	Do
4	Expansion of PTI	06	Do
		769	

## **5.0 Environmental Screening of Sub-projects:**

### **5.1. Methodology for assessing environmental impacts:**

The following methodology has been followed for assessing the environmental impacts of the sub-projects". The District & Upazila Offices of LGED were responsible for inspection and reviewing the existing facilities to fill up the screening format along with preparation of environment management plan (EMP) and its implementation. In particular, the Upazila Sub-Assistant Engineer or Upazila Assistant Engineer/ Assistant Engineer conducted the screening process for preparation sub-project specific EMP. The District Executive Engineer/Upazila Engineer reviewed the screening report and EMP through field visit. In addition of that, District Executive Engineer/Upazila Engineer will also be responsible for supervision and monitoring of environmental mitigation activities at district/upazila level during construction phase.

Additionally, the engineers working at regional and divisional offices of LGED will monitor the environmental mitigation or enhancement measures during construction phase. Furthermore, the engineers /officers of Primary Education Infrastructure Management Unit (PEIMU) of LGED HQ will also monitor and supervise the environmental mitigation measures at field level.

Moreover, Environmental Specialist working at PEIMU is providing assistance in the field of capacity enhancement processes and also providing support in implementing the environmental and social safeguard frameworks of PEDP4.

### **5.2. Sub-projects screened:**

LGED screened 769 sub-projects for construction and expansion of additional rooms and other institutional infrastructures respectively during the reporting period. The sub-projects include 761 schools and 8 no's other institutional infrastructures such as PTI, DD and DPEO office etc.

#### **A. School Sub-projects :**

It can be noted that 761 schools had been screened for construction of 3151 numbers of additional class rooms in different upazilas of Bangladesh. The district wise geographical distribution of schools undertaken for construction of additional rooms presented in a map is given in Fig-2.

# Geographical Distribution of 761 Schools

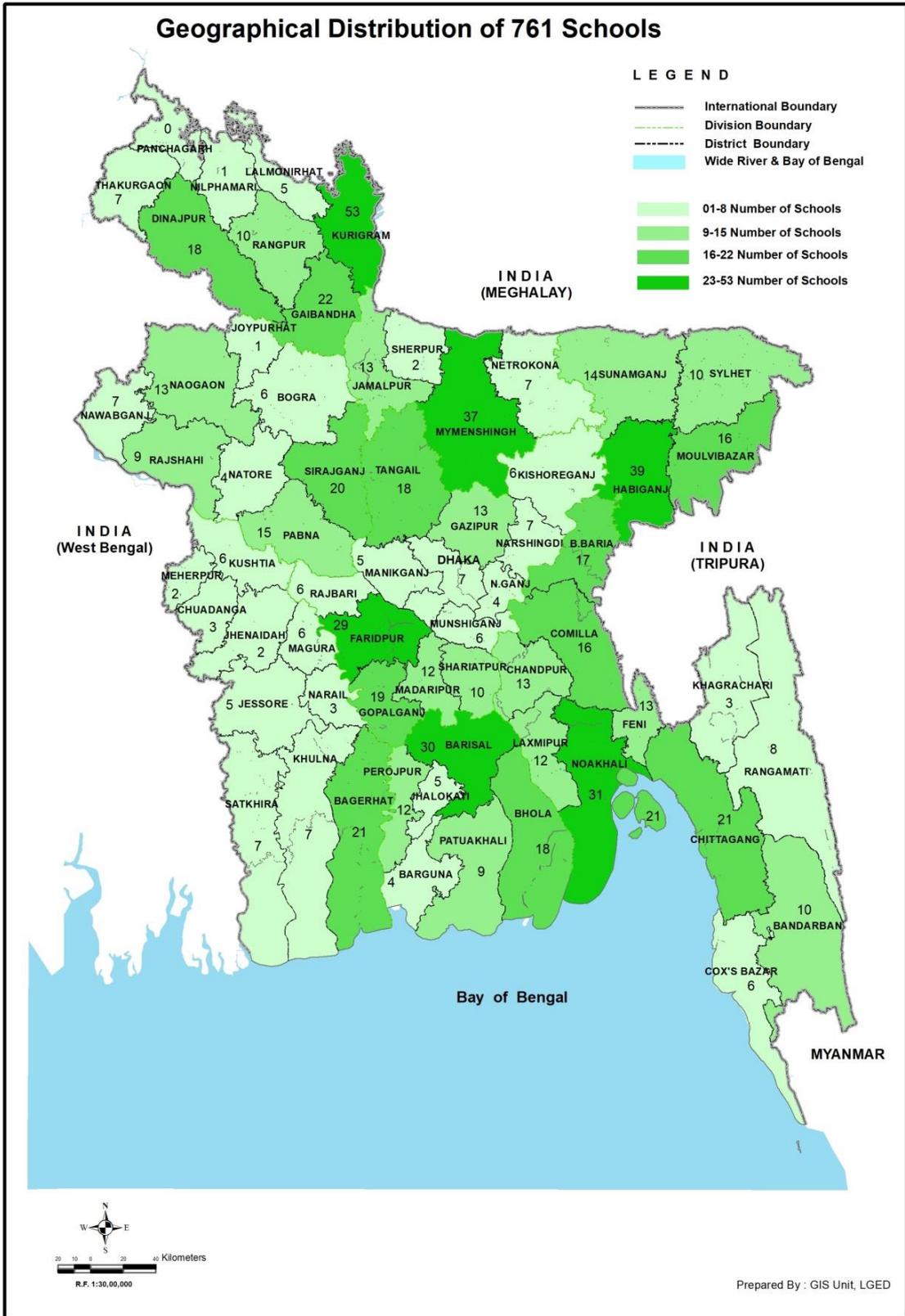


Fig. 2 Geographical distribution of 761 schools undertaken for construction of additional class rooms.

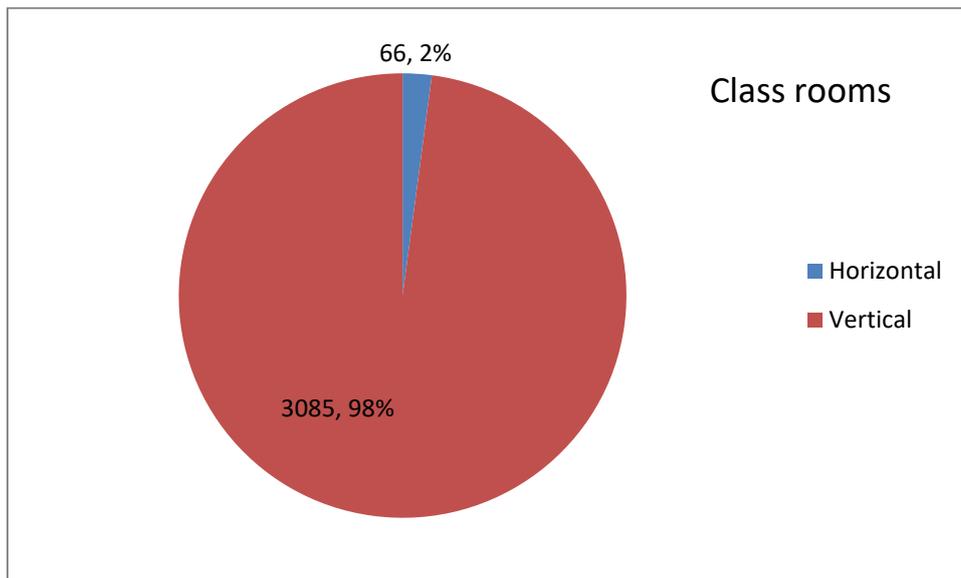


Fig. 3, Pie chart showing % of school class rooms to be built vertically and horizontally

It is seen from the Fig.3, out of 3151 class rooms , 743 schools consisting 3085 class rooms(98%) will be vertically extended and remain 18 schools consisting 66 class rooms ( 02% ) will be constructed horizontally.

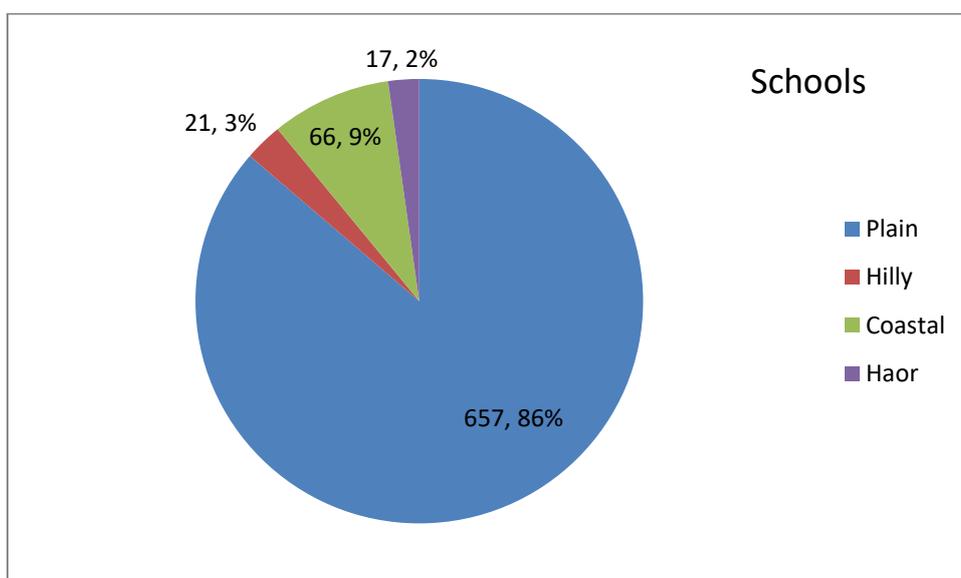
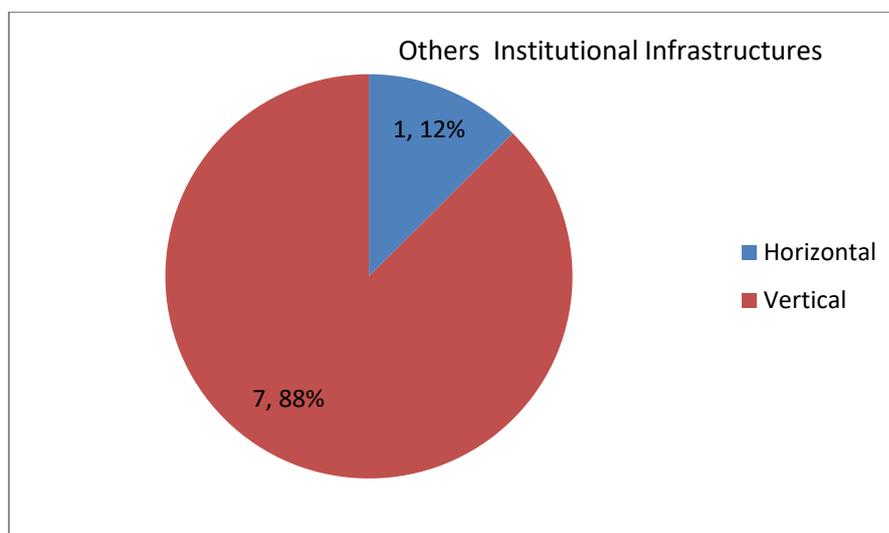


Fig.4, Pie chart showing % of schools located in plain, hill, coastal and haor area

Similarly, it is seen from Fig. 4 ,out of 761 schools screened for construction 657 schools(86%) are located in plain land, 66 schools(09%) are in coastal area, 17 schools(02%) situated in haor area and remaining 21 schools(03%) are in hilly area.

**B. Other institutional Sub-projects:**

It can be seen from Fig.5 that out of the eight sub- projects, seven sub-projects (87.5%) to be extended vertically and remaining one (12.5%) will be constructed horizontally. The list of other institutional sub-projects is given below in table-6.



**Fig.5, Pie chart showing % of sub-project to be built vertically and horizontally**

**Table 4: Categorization and other status of Sub-projects**

Sl.No.	Type of Sub-project	No. of Sub-project	Sub-project Categorization	Does EMP cost included in BOQ	Work Status/ % of completion
1	Construction of additional class rooms of School	761	C	EMP cost is included in BOQ	Tendering stage
2	Construction of DD Office	01	C	EMP cost is included in BOQ	Early stage of work
3	Expansion of DPE Office	01	C	EMP cost is included in BOQ	Do
4	Expansion of PTI	06	C	EMP cost is included in BOQ	Do
		769			

**Table 5 : List of other institutional sub-projects under implementation**

SI No	Name of sub-project	Status of work	% of physical completion	Does EMP cost included in BOQ
1	Construction of 3 stored Auditorium Complex at <b>Rangpur</b> PTI (4 stored foundation)	Initial stage of work		yes
2	Construction of Multipurpose Auditorium at <b>Sylhet</b> PTI (1 <sup>st</sup> and 2 <sup>nd</sup> floor)	Do		yes
3	Expansion work of multipurpose Auditorium at <b>Rajshahi PTI</b>	Do		yes
4	Construction of 3 stored female Hostel building (6 stored foundation) at Pabna PTI	Do		yes
5	Expansion of Male Hostel (2 <sup>nd</sup> floor and roof top) 3 stored building with 6 stored foundation at <b>Cox's Bazar</b> PTI complex	Do		yes
6	Expansion of Male Hostel (2 <sup>nd</sup> floor and roof top) 3 stored building with 6 stored foundation at <b>Dinajpur</b> PTI complex	Do		yes
7	Construction of Deputy Director office Khulna 3 stored building with 6 stored foundation	Do		yes
8	Vertical expansion of DPO Office ( 2 stored to 3 stored) at Kushtia	Do		yes

It can be seen from the above tables that all the Sub-projects under implementation are in category “C” type sub-projects and EMP implementation cost has been included in the BOQ. It is noted that sub-projects for construction of additional rooms of schools are at tendering stages and others institutional sub-projects are early stage of construction.

## **6.0 Environmental Management Plan (EMP):**

In the context of a sub-project, Environmental Management Plan is concerned with the implementation of the measures necessary to minimize or offset adverse impacts and to enhance beneficial impacts. Unless the mitigation and benefit enhancement measures identified in the Site Specified Initial Environmental Examination (SSIEE) are fully implemented, the prime function of SSIEE cannot be achieved. Thus the objectives of the EMP for the present project would be:

- (i) mitigation measures to reduce or eliminate negative impacts
- (ii) enhancement measures to maximize positive impacts
- (iii) monitoring the identified indicator.

## **6.1 Existing Impacts on Environment:**

As per Environmental Management Framework (EMF) of PEDP4, the sub-projects under reporting belong to category-C type means they have the minimal environmental impacts.

Fig.3 shows that 98 % of sub-projects are being extended vertically over existing structure and all the sub-projects under implementation are located in existing compound. Therefore, concern for land use, earth work for foundation and top soil loss will be less and it is likely that the environmental concern will be also minimal. However, in case of horizontal extension for 2% sub-projects proper care to be taken to maximize the benefit of use of this scarce land specially to maintain the good physical environment of campus.

Moreover, it appeared from the screening report that none of the sub-projects are located in any ecologically protected area and no possibility of negative impact on wet land was also observed. Similarly, no loss of agricultural land was also reported.

The others existing impacts are elaborated in the underline:

### **Location of the sub-projects:**

All the sub-projects i.e. schools are located within the existing school campus and no negative impact due to sub-projects location on the existing environment was observed.

### **Air Pollution:**

Normally, air quality is generally affected by dust generation from construction sites. Dust generates from material stockpiles and access roads. Such pollution is also a function of weather conditions, in dry season nuisance is more; during rainy season, dust nuisance reduces. Mitigation measures is taken to cover the construction materials (sand and aggregates etc.) properly and sprinkling of water over material stockpile as and when required.

**Noise Pollution:** Noise pollution is normally due to some construction-related activities, operation of equipment and generators. Noise will impact project workers, nearby residents and wildlife (specially birds, snakes etc.). Mitigation measures normally casting of major items such as foundation and slabs will be done during week end.

**Occupational Health and Safety:**

Construction activities may pose health and safety risks to the construction workers and nearby residents leading to severe injuries and deaths in extreme cases or a major accident. A lack of first aid facilities and health care facilities in the immediate vicinity would aggravate the health conditions of the victims.

Lack of water and sanitation facilities at construction sites inconveniences construction workers and affect their personal hygiene. Therefore, First aid boxes, PPE, adequate safe drinking water and hygienic sanitation facilities should be provided at the construction sites by the contractors during construction.

**Arsenic and Other Parameters:** The major environmental concern for the installation of new tube-well is to ensure safe drinking water provision to the users. All these water parameters should be tested at least once a year and based on the result, proper action should be taken.

**Employment Generation/Income:** During construction, a considerable quantity of workers (both male & female) will be required for the construction works. Conflict between male & female may be arisen if women workers are deprived. Proper wages to be ensure for construction workers, particularly for women labors.

**6.2. Mitigation/Benefit Enhancement Measures:**

The typical mitigation and benefit enhancement measures to be followed at the sub-projects level are presented underline considering environmental issues of the sub-projects:

**Table-6, Proposed mitigation/ benefit enhancement measures**

<b>Environmental Issues/Impacts</b>	<b>Mitigation/Enhancement Measures</b>
Location and disruption of earth surface	Disruption of earth surface should be kept minimal at site.
Drainage congestion	Adequate drainage facilities to be provided in campus and construction camp.
Waste management	Wastes collection bins to be provided for organic wastes in one bin & inorganic wastes in another bin at the source and to be dumped properly
Dust pollution	Dust to be controlled by covering construction materials and spraying water manually where dust blows as and when required.
Noise pollution	Construction activities to be carried out in day time. Casting of major parts such as slab and foundation to be done during week end.

Environmental Issues/Impacts	Mitigation/Enhancement Measures
Worker accident	Warning signs to be set up and helmet to be provided for the workers.
Employment generation/income	Local poor and affected persons to be engaged in sub-project works and contractor to be encouraged to engage women workers. Also contractors to be encouraged to pay proper wage to workers.
Occupational Health Safety(OHS)	Project workers have to be provided PPE, First Aid Box, face mask, quality drinking water, hygienic toilets and WASH blocks.
Tree Plantation	Trees to be planted in proper place and number around the boundary of school campus.
Design standard risks	Planning and designs are being developed/ensured following the Bangladesh National Building Code (BNBC).

#### **Additional Mitigation Measures:**

The following mitigation measures are suggested to be taken care against the environmental concerns during the construction phase. Such as:

- a. In case of demolition of any existing building, great care should be taken to avoid any accident. All precaution in this regard shall be undertaken by the sub-project proponent;
- b. Temporary accommodation for the work forces near the site area with adequate provision of water supply for drinking, bathing and washing purposes shall be ensured;
- c. Sufficient latrines to be constructed so as not to pose a health hazard;
- d. Safety goggles of accepted standard should be used who are engaged in drilling, cutting, welding and all such other works which cause hazard to the eye;
- e. Helmet shall be worn by the workmen and other personnel during work;
- f. Toxic materials are barred to be used in the construction such as lead based paints, asbestos etc;
- g. Building materials that may potentially threaten the environment are discouraged;
- h. Fencing should be provided around the construction site;
- i. Traffic congestion should be minimized by adopting proper planning. Timing schedule for arrival of construction materials can be adjusted so that interruption with the public utility services is minimal;
- j. Dust and particulate materials causing nuisances to surrounding areas would be kept minimal by careful handling of cement and breaking khoa by labour instead of the khoa breaking machine;

- k. Undesirable noise should be avoided by confining the source of noises. The khoa breaking machine should be avoided and manual breaking should be adopted. In no case such machine should be allowed to operate at night;

Furthermore, to avoid any accidental risk proper precaution should be taken up. Medical First Aid Box should be kept at the site for any injury and transport should be made instantaneously available to take the patient to the hospital in case of major accidents.

## **7.0 Positive impact/environment enhancement**

### **7.1. Positive impact**

There will be employment generation during the construction phase and as well as in the operation phase of project. The sub-projects would meet the demand of the need of schools/class rooms of the respective areas.

### **7.2. Benefit Enhancement Measures to be taken**

Although the sub-project proponent deserves the right to employ the best workers, the local people should get preference in such cases which would generate opportunities for employment of the local people. 30% women will be employed in construction work of the sub- project of school and other infrastructural development under PEDP4.

### **7.3 Site/Project Alternatives**

Site Alternatives are required when the proposed site vulnerable to river erosion, coastal erosion and erosion in the Haor region due natural calamities. In those cases, consultation with SMC, community leader, Key Informant, DPE officials and LGED engineer regarding the sub-project site shifting in new site is crucial. But, the sub-projects under reporting did not encounter any of the vulnerabilities. Therefore, site alternatives were not required.

## **8. Training /Capacity building**

Training on environmental management and monitoring is very essential for the engineers /officials of LGED and contractors for successfully implementing the EMP. LGED already completed orientation courses country wide on environment and social safeguard issues for district and upazila level officers of LGED and DPE held at regional level during September 2019. In those courses approximately 1200 engineers /official of LGED and about 575 officials from DPE participated.

Furthermore, LGED is planning to conduct Training of Trainers (ToT) courses for field level engineers so that they can able to provide training or orientation on safeguard issues at district and upazila level.

Moreover, LGED already developed web-based software named Primary Education Infrastructure Management System (PEIMS) for managing the development activities in every phase like planning, packaging, approval, procurement, execution, budgeting,

funding and auditing. The provision has been made in PEIMS so that screening and monitoring formats of EMF and SMF can be filled in PEIMS. This will facilitate to get the compilation data of screening and monitoring country wide to be used for reporting the EMR and SSMR efficiently.

## 9.0 Environmental Monitoring

### 9.1 Construction phase Monitoring

During the construction phase, environmental monitoring of small scale constructions of the additional class rooms and other infrastructure is very important to identify the site specific potential environmental impacts and its mitigation and enhancement measures in the proposed existing school campus.

In general, the following indicators and the related mitigation measures will be monitored during construction stage: (i) Sanitary toilets and pure drinking water both for male and female workers; (ii) First aid box and safety of workers; (iii) stacking of materials at safe place, (iv) surface water pollution; (v) dust and noise pollution; (vi) child labor (vii) engagement of local people; (viii) drainage network, (ix) cutting of trees etc.

A web-based Primary Education Infrastructure Management System (PEIMS) of PEDP4 has been developed to record the environmental mitigation measures and monitoring data along with the infrastructure development management information. Monitoring parameters has been given in Table 7. The PEIMS will generate information on environmental monitoring and later that information will be analyzed to prepare monitoring report biannually by LGED. Till the reporting period, as the construction has not been started the monitoring report could not be prepared.

**Table7: Result of construction phase monitoring**

Sl.No.	Description of Parameters	Nos. followed	Nos. Not followed	Remark
1.	The contractor will erect sufficient number of temporary sanitary toilets and shelter both for male and female workers at the site with proper sanitation system.			
2.	The contractor will ensure supply of pure drinking water to the workers during the time of construction.			
3.	The contractor will keep a first aid box at the site for any accident.			
4.	The contractor will take necessary precaution for the safety of his workers and also for the safety of the pedestrians.			
5.	The contractor will stack materials systematically in a safe place so that pedestrians do not fall in troubles/ accident and do not occupy any classroom.			

Sl.No.	Description of Parameters	Nos. followed	Nos. Not followed	Remark
6.	The contractor will not engage any child labor in the work.			
7.	The contractor will not pollute any nearby source of surface water by any of their activities.			
8.	The contractor will try to minimize sound pollution. If such sound producing activity becomes unavoidable, it should be matched with the local condition so that the adverse impact can be kept minimum.			
9.	The contractor will engage local people in the work as far as possible. The vulnerable destitute women should get preference.			
10.	The contractor will not hamper the drainage network of the area by any of their activity.			
11.	The contractor will not cut or damage any tree in and around the project area without the permission of the supervising authority.			
12.	The contractor will take every initiative to reduce <b>dust emission</b> during the construction work i,e sprinkling of water on the dust etc.			
13.	The contractor will not set any temporary burner under any tree.			No burner is required in school construction
14.	If required, the contractor will collect filling earth from existing ditches, ponds and fallow lands to avoid land loss.			

Note: Item 7: Usually the surface water near the school construction is generally polluted due to dumping of the construction wastes in the water.

Item 11: The cutting of trees is compensated by planting trees in the school premises after the construction.

In addition of that the table: 8 presented in below to be furnished in the EMR to presents the summary and updated information on the EMR OF Sub-projects.

Table 8: Summary and Updated information on the EMR of Sub-project

Monitoring Criteria	Progress Reporting			Remarks
	(Jan-Jun)	(Jul-Dec)	Cumulative Progress	
No. of Contract Awarded including IEE and EMP	-	-	-	Tendering stage
NO. of Contract that Incorporated Environmental Clauses	-	-	-	Tendering stage
No. of trees cut down	-	-	-	Implementation not yet started
No. of trees planted	-	-	-	Implementation not yet started
Budget used for OHS	-	-	769	Budget kept in BOQ
No. of School for which water logging problem solved.	-	-	-	Implementation not yet started

#### 10. Measures undertaken to implement the EMF:

LGED has taken various measures to implement the EMF so that the environmental issues are properly addressed in implementation of PEDP4 development activities. Following are the measures:

In consideration of increasing workload of implementation of the EMF, LGED engaged a full-time Environmental Specialist from September 2018. The Environmental Specialist is responsible for implementation of the EMF and its provisions, including compliance checking, facilitation, coordination and ensuring dissemination, orientations and capacity building activities.

Planning and designs of sub-projects are being developed/ensured following the Bangladesh National Building Code (BNBC).

#### 11. Conclusion

Though the PEDP4 started from July 2018, no major physical works yet to be started during the reporting period except maintenance works. It is noted that the sub-projects under reporting are small and not complex in nature which may not likely to cause significant and/or irreversible adverse environmental impacts. Most of the project impacts would be minor and localized during construction.

It is understood that the monitoring of mitigation measures of environmental impacts is very important during sub-projects construction phase. For monitoring the compliance of the environmental safeguard issues during construction, a monitoring checklist has been developed and the field officers are required to report quarterly to the head quarter through web-based software PEIMS. In PEDP4, environmental

management cost has been provided for each of the sub-projects which would results a better environmental practice and sustainable infrastructural development. Finally, it is expected that the measures already undertaken would generate positive outcome towards managing the environmental safeguard activities of PEDP4 properly.

## Annexed: Filled in Environmental Screening Format

### APPENDIX 3: ENVIRONMENTAL SCREENING OF SUBPROJECTS

#### Appendix-3.1: SUB-PROJECT IDENTIFICATION FOR CONSTRUCTION OF CLASSROOMS

Name of the Work/School/Office: *Rajarohar Ukil Kandi Govt. Primary School.*

Name of the District: *Madakipura.*

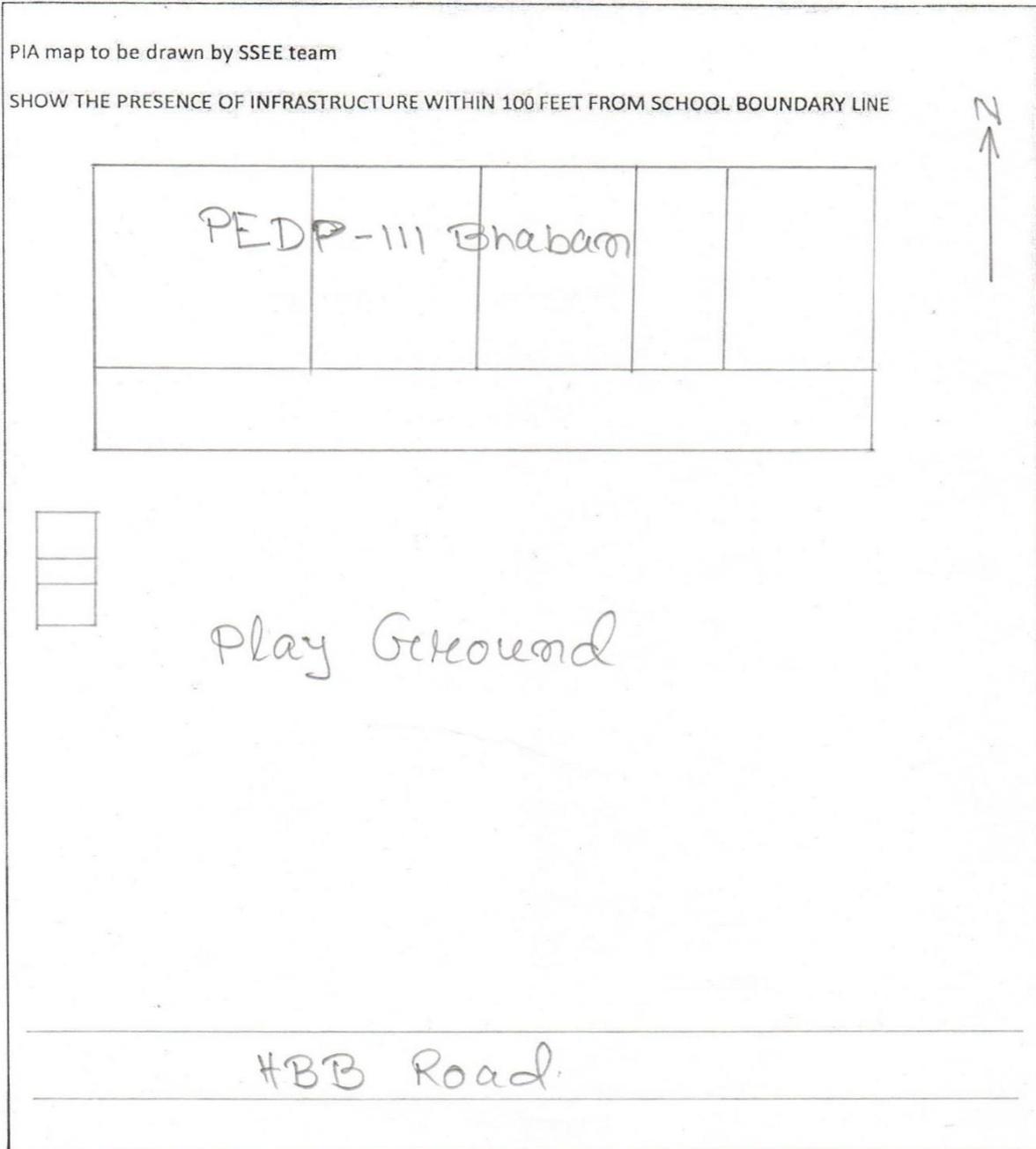
Name of the Upazila, Union & Village: *Shebarah, Shamray Shikhar, Ukil Kandi.*

EMIS Code of the School: *99315029012*

#### Appendix-3.2: PROPOSED ACTIVITIES AS PER PRELIMINARY SCHEME DESIGN

Title of Activities	Description of Proposed Activities (Length, width, area, volume, height etc.)	Remarks
Land development	Filling a low land by Sand filling (30ft X 20 ft X 10 ft)	
Construction of main school building (extension)	<i>Vertical Extension.</i>	
Construction of boundary wall	<i>Boundary wall Required</i>	
Construction of internal Roads	<i>100'x10' Internal Road Required.</i>	
Construction of water supply and sanitary latrine	<i>Water supply &amp; Sanitary Latrine Required.</i>	

**Appendix-3.3:** Project Influence Area (PIA) map (please draw an updated site map containing key environmental features and proposed interventions including outlet of the drainage network). The design should harmonize with local surroundings, including landscaping and planning for other uses for all additionally created spaces, proper ventilation, and lighting in order to minimize negative impacts on environmental quality and property values.



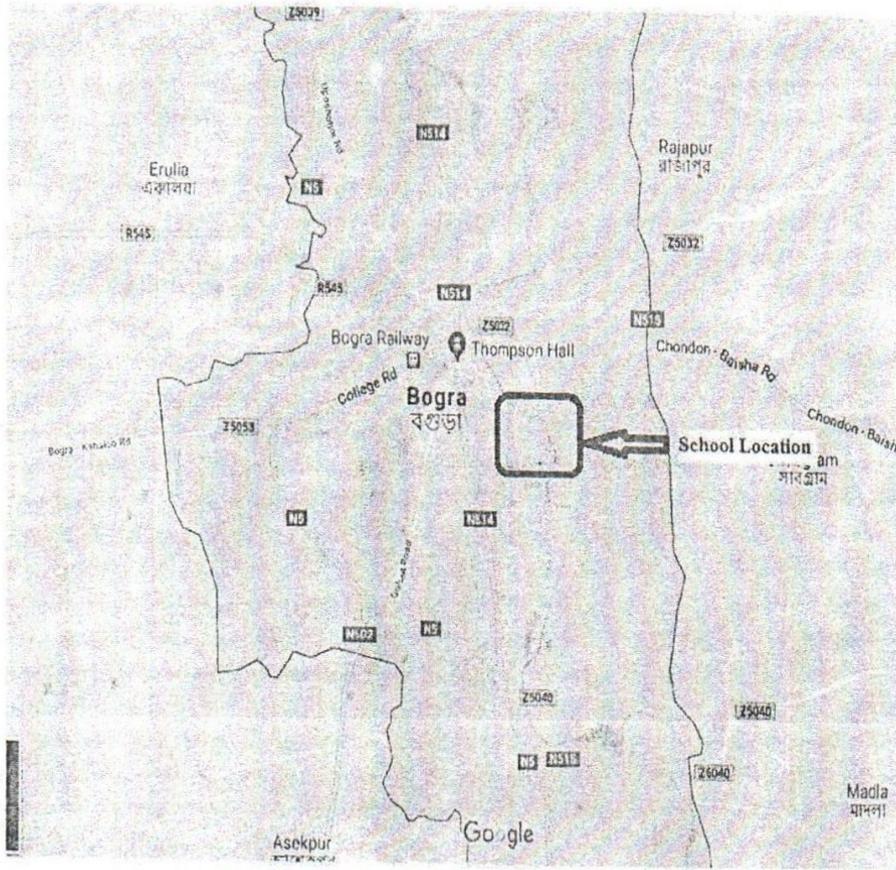


Figure B.1: Sample Location Map of the School in Google Map.

**Appendix-3.4: ENVIRONMENTAL SCREENING FOR EXTENSION/RECONSTRUCTION OF SCHOOL & OFFICE BUILDINGS**

Project Name: Fourth Primary Education Development Program (PEDP4)

Date of Screening: 20-09-2019

Category of component based on environmental regulations of the Government of Bangladesh:

Name of School: Rajapur Ukilkandi Govt. Primary School

District: Madaripur Upazila: Shebchar

Union: Shamajshebchar Village: Ukilkandi

Type of Subproject: \_\_\_\_\_

Major Activities of the Subproject: Vertical Extension



### APPENDIX 3: ENVIRONMENTAL SCREENING OF SUBPROJECTS

#### Appendix-3.1: SUB-PROJECT IDENTIFICATION FOR CONSTRUCTION OF CLASSROOMS

Name of the Work/School/Office: *Rajwarah Ukil Kande Govt. Primary School.*

Name of the District: *Madakipore.*

Name of the Upazila, Union & Village: *Shebarah, Shamraj Shebarah, Ukil Kan.*

EMIS Code of the School: *99315029012*

#### Appendix-3.2: PROPOSED ACTIVITIES AS PER PRELIMINARY SCHEME DESIGN

Title of Activities	Description of Proposed Activities (Length, width, area, volume, height etc.)	Remarks
Land development	Filling a low land by Sand filling (30ft X 20 ft X 10 ft)	
Construction of main school building (extension)	<i>Vertical Extension.</i>	
Construction of boundary wall	<i>Boundary wall Required</i>	
Construction of internal Roads	<i>100'x10' Internal Road Required.</i>	
Construction of water supply and sanitary latrine	<i>Water Supply &amp; Sanitary latrine Required.</i>	

SCREENING QUESTIONS	Yes	No	Impact Scale	If "Yes", please provide REMARKS
<b>A. Subproject Siting</b>				
Is the subproject area adjacent to or within any of the following environmentally sensitive areas?		NO		
Protected Area		NO		
Wetland		NO		
Unstable slope, landslide, erosion area		NO		
Disaster prone area (e.g. flood, cyclone, storm surge)		NO		
<b>B. Potential Environmental Impacts Will the subproject cause.....?</b>				
Loss of agricultural/forest land?		NO		
Negative effects on rare, (vulnerable), threatened, or endangered species of flora and/or fauna or their habitat?		NO		
Negative effects on designated wetlands?		NO		
Negative effects on locally important or valued ecosystems or vegetation?		NO		
Destruction of trees and vegetation?		NO		Mainly due to horizontal extension of school.
Insufficient drainage leading to water logging?		NO		
Negative effects on surface water quality, quantities or flow?		NO		
Block any road/access/approach?		NO		
Will there be any long-term impacts on local hydrology?		NO		
Is adequate water supply to school available?		NO		
Increased noise due to day-to-day construction activities?		NO		
<b>C. Other Potential Impacts Will the subproject cause.....?</b>				
Degradation or disturbance of historical or culturally important sites (mosque, graveyards, monuments etc.)?		NO		
Health risks to labors involved in activities?		NO		

SCREENING QUESTIONS	Yes	No	Impact Scale	If "Yes", please provide REMARKS
D. Potential Positive Environmental Impacts				
Improved sanitation and personal hygiene		NO		
Enhanced quality of school environment		NO		
E. Environmental assessment category as per GOB				
What is the environment assessment category (DDR or IEE) as per ECA- 97 and				As per DOE (ECA & ECR 97), Category- Orange A & ADB,
Will project enhance quality of education?	Yes			
Score Total				

Notes: Exact screening results will be site specific of subproject. ADB = Asian Development Bank, DDR = Due Dilligence Report, ECA = Environmental Conservation Act, ECR = Environmental Conservation Rules, GOB = Government of Bangladesh, IEE = initial environmental examination, SPS = Safeguard Policy Statement; Source: ADB.

### Appendix 3

Type of Environmental Assessment to be undertaken:

Completed by: \_\_\_\_\_

Designation: \_\_\_\_\_

Filled and signed by LGED/DPHE Assistant Engineer: \_\_\_\_\_

Name: Md. Mosharaf Hossain (SAE)

Date: 20-09-2019



**Md. Iqbal Hossain**  
Upazila Engineer  
Shibchar, Madaripur.

Reviewed and signed by LGED/ DPHE Executive Engineer:

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Appendices

### **APPENDIX -1:** Environmental Screening of Subprojects

#### **Appendix-1.1 :** SUB-PROJECT IDENTIFICATION FOR CONSTRUCTION OF CLASS ROOMS

Name of the Work/School/Office :

Name of the District :

Name of the Upazila, Union & Village:

EMIS Code of the School :

#### **Appendix-1.2:**

#### **PROPOSED ACTIVITIES AS PER PRELIMINARY SCHEME DESIGN**

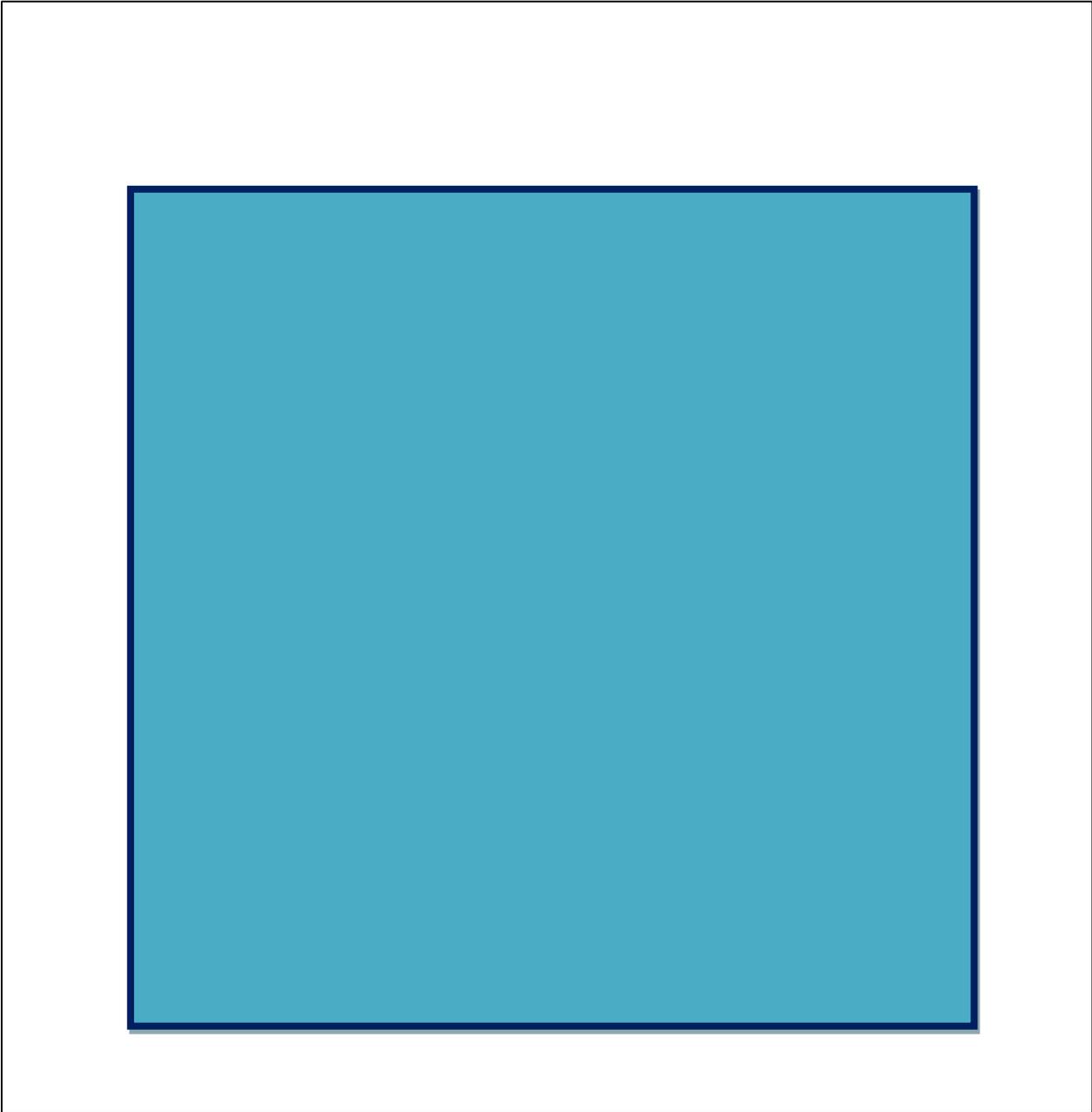
<b>Title of Activities</b>	<b>Description of Proposed Activities (Length, width, area, volume, height etc.)</b>	<b>Remarks</b>
Land development	Filling a low land by Sand filling (30ft X 20 ft X 10 ft)	
Construction of main school building (extension)		
Construction of boundary wall		
Construction of internal Roads		
Construction of water supply and sanitary latrine (toilet)/WASH Block		

**Appendix-1.3:**

Project Influence Area (PIA) map (please draw an updated site map containing key environmental features and proposed interventions including outlet of the drainage network). The design should harmonize with local surroundings, including landscaping and planning for other uses for all additionally created spaces, proper ventilation, and lighting to minimize negative impacts on Environmental quality and property values.

PIA map to be drawn by SSEE team

SHOW THE PRESENCE OF INFRASTRUCTURE WITHIN 100 FEET FROM SCHOOL BOUNDARY LINE



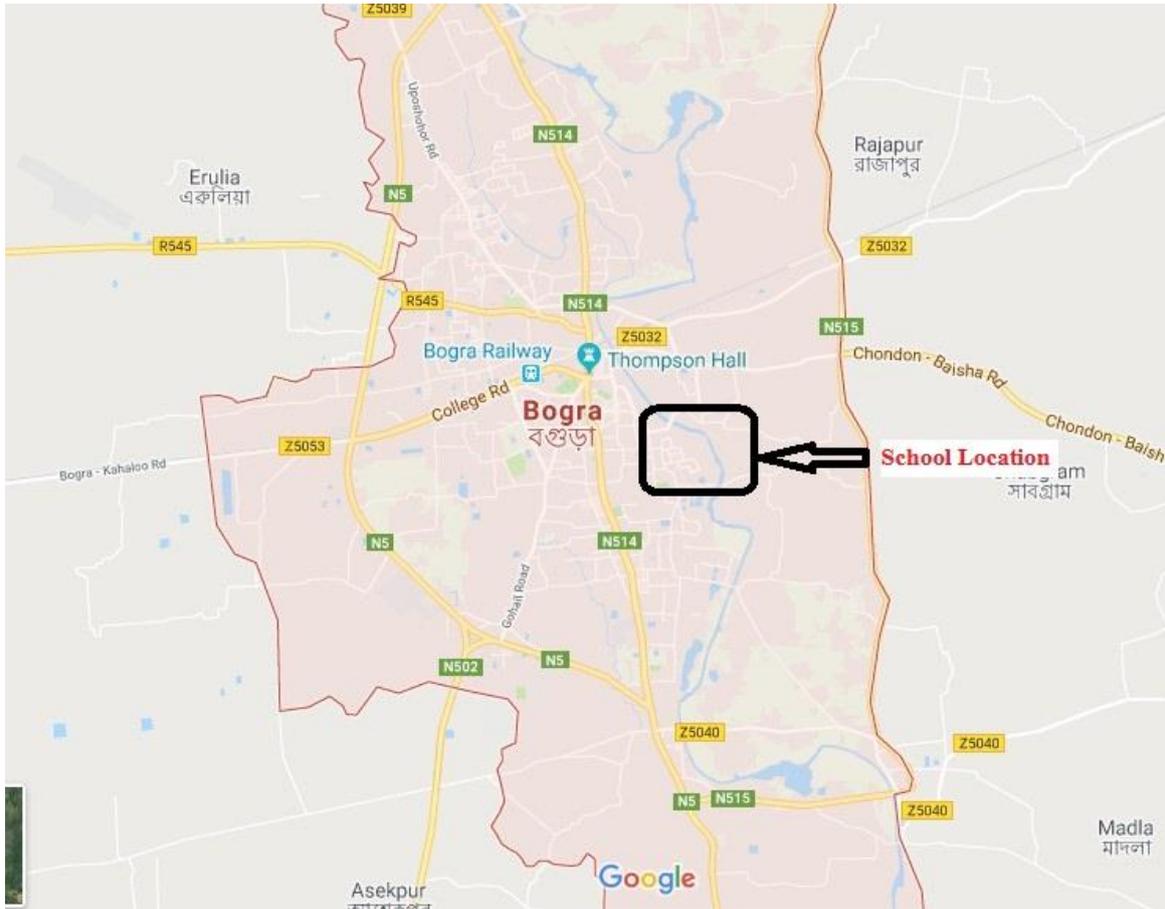


Figure 1: Sample Location Map of the School in Google Map.

**Appendix-1.4:**

**ENVIRONMENTAL SCREENING FOR EXTENSION/RECONSTRUCTION OF SCHOOL & OFFICE BUILDINGS**

Project Name: Fourth Primary Education Development Program (PEDP4)

Date of Screening: \_\_\_\_\_

Category of component based on environmental regulations of the Government of Bangladesh:

Name of School: \_\_\_\_\_

District: \_\_\_\_\_

Upazila: \_\_\_\_\_

Union: \_\_\_\_\_

Village: \_\_\_\_\_

Type of Subproject: \_\_\_\_\_

Major Activities of the Subproject: \_\_\_\_\_

SCREENING QUESTIONS	Yes	No	Impact Scale (Low-1 and	If "Yes", please provide REMARKS
A. Subproject Siting Is the subproject area adjacent to or within any of the following environmentally sensitive areas?				
Protected Area				
Wetland				
Unstable slope, landslide, erosion area				
Disaster prone area (e.g. flood, cyclone, storm surge)				
B. Potential Environmental Impacts Will the subproject cause.....?				
Loss of agricultural/forest land?				
Negative effects on rare, (vulnerable), threatened, or endangered species of flora and/or fauna or their habitat?				
Negative effects on designated wetlands?				
Negative effects on locally important or valued ecosystems or vegetation?				
Destruction of trees and vegetation?				Mainly due to horizontal extension of school.
Insufficient drainage leading to water logging?				
Negative effects on surface water quality, quantities or flow?				

SCREENING QUESTIONS	Yes	No	Impact Scale (Low-1 and	If "Yes", please provide REMARKS
Block any road/access/approach?				
Will there be any long-term impacts on local hydrology?				
Is adequate water supply to school available?				
Increased noise due to day-to-day construction activities?				
C. Other Potential Impacts Will the subproject cause.....?				
Degradation or disturbance of historical or culturally important sites (mosque, graveyards, monuments etc.)?				
Health risks to labors involved in activities?				
D. Potential Positive Environmental Impacts				
Improved sanitation and personal hygiene				
Enhanced quality of school environment				
E. Environmental assessment category as per GOB				
What is the environment assessment category (DDR or IEE) as per ECA 97 and ECR97 of GOB and ADB's SPS?				As per DOE (ECA & ECR 97), Category- Orange A & ADB, Category-C.
Will project enhance quality of Education?				
Score Total				

Notes: Exact screening results will be site specific of subproject. ADB = Asian Development Bank, DDR = Due Diligence Report, ECA = Environmental Conservation Act, ECR = Environmental Conservation Rules, GOB = Government of Bangladesh, IEE = initial environmental examination, SPS = Safeguard Policy Statement

Type of Environmental Assessment to be undertaken:

Completed by: \_\_\_\_\_

Designation: \_\_\_\_\_

Filled and signed by LGED/DPHE Assistant Engineer: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed and signed by LGED/ DPHE Executive Engineer:

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**APPENDIX -2: Template for Environmental Management Plan (EMP)**

**Appendix-2.1: Mitigating/Enhancement Plan for Environmental Impacts (During Construction)**

<b>Environmental Issues/Impacts Requiring Mitigation</b>	<b>Mitigation/Enhancement Measures</b>	<b>Implementation By</b>	<b>Supervision By</b>

Note: The above Table should be filled with the help of Table 2 of the EMF Report.

**Appendix-2.2: Mitigating/Enhancement Plan for Environmental Impacts (During Operation)**

<b>Environmental Issues/Impacts Requiring Mitigation</b>	<b>Mitigation/Enhancement Measures</b>	<b>Implementation By</b>	<b>Supervision By</b>

Note: The above Table should be filled with the help of Table 3 of the EMF Report.

**Appendix-2.3: Environmental Monitoring Plan (During Construction Stage)**

<b>Environmental Issues/Impacts to be Monitored</b>	<b>Monitoring Indicators</b>	<b>Location</b>	<b>Frequency</b>	<b>Implementation By</b>	<b>Monitoring By</b>

Note: The above Table should be filled with the help of Table 5 of the EMF Report.

**Appendix-2.4: Environmental Monitoring Plan (During Operation Stage)**

<b>Environmental Issues/Impacts to be Monitored</b>	<b>Monitoring Indicators</b>	<b>Location</b>	<b>Frequency of Monitoring</b>	<b>Implementation By</b>	<b>Monitoring By</b>

Note: The above Table should be filled with the help of Table 6 of the EMF Report.