Environmental Assessment and Review Framework

Secondary Education Sector Investment Program

Prepared by Ministry of Education
April, 2013

CURRENCY EQUIVALENTS

(as of 25 February 2013)

Currency unit	–	taka (Tk)
Tk1.00	=	$0.01291
$1.00	=	Tk77.4520

ABBREVIATIONS

ADB	–	Asian Development Bank
DEC	–	District Education Committee
DDR	–	due diligence report
DOE	–	Department of Environment
DSHE	–	Directorate of Secondary and Higher Education
EARF	–	Environmental Assessment and Review Framework
ECC	–	environment clearance certificate
ECR	–	Environmental Conservation Rules
EED	–	Education Engineering Department
EIA	–	Environmental Impact Assessment
EMP	–	environmental management plan
GOB	–	Government of Bangladesh
GRC	–	Grievance Redress Committee
IEE	–	initial environment examination
PIU	–	Project Implementation Unit
SESIP	–	Secondary Education Sector Investment Program
SMC	–	School Management Committee
SPS	–	Safeguard Policy Statement
SPSU	–	Sector Program Support Unit

WEIGHTS AND MEASURES

dbA	–	decibels
m	–	Meter
mg/l	–	Milligrams per liter

GLOSSARY

Madrasah	Religious school or college for the study of the Islamic religion, though this may not be the only subject studied
Upazilla	Sub-district; lowest administrative unit
Union Parishad	Union Council; lowest local government body in the rural areas

NOTE

(i) The fiscal year (FY) of the Government ofBangladesh{and its agencies}ends on30 June.FY before a calendar year denotes the year in which the fiscal year ends, e.g., FY2013 ends on30 June2013.

CONTENTS

Executive Summary

1. Secondary Education Sector Investment Program will support the implementation of key reforms envisaged in the National Education Policy (2010) in a phased manner. The program will support for upgrading the physical facilitiesand equipment of government secondary Teacher's Training College, Upazila education offices, including school infrastructure development - construction and renovation of school buildings including science labs, stack yards,and Madrasah Teaching Training Institute. Support will include renovation of classrooms, libraries, laboratories, storage, and provision of furniture and teaching aids, where necessary.

2. This report on Environmental Assessment and Review Framework (EARF) of the Program complies with the provisions of Asian Development Bank's (ADB) Safeguard Policy Statement (SPS) (2009). The EARF has been carried out to ensure that the potential adverse environmental impacts are appropriately mitigated and to present the environmental assessments for the Program. The objectives and scope of this EARF are to (i) assess the existing environmental conditions of the program area; (ii) identify potential adverse environmental impacts from the proposed program construction; (iii) evaluate and determine the significance of the impacts; (iv) develop an environmental management plan (EMP) with detailing mitigation measures, monitoring activities, reporting requirements, institutional responsibilities, and cost estimates to address adverse environmental impacts; and (v) carry-out public consultations to document any issues/concerns and to ensure that such concerns are addressed in the program design.

3. The program is not expected to have significant or irreversible negative environmental impacts neither at the construction, nor at the operation phases. Impacts of the construction phase will be typical for all medium-scale rehabilitation/construction activities and limited to the program sites. Impacts of the operation phase will be typical for small civil works. The program anticipated environmental impacts although very limited may include drainage congestion/water logging, dust pollution, noise pollution, occupational health hazards due to improper management of construction materials and solid and hazardous waste from civil works and school labs, risk from poor sanitation system, improper lighting, and ventilation system in schools, etc. Due to the vulnerable geographic location of some schools, there may be some risks which may include arsenic, salinity and iron contamination in drinking water, natural disaster (earthquake), and extreme climate events (heat wave, cyclone, storm surge, etc.). These impacts are not program-related; rather they are geographical location-related and site specific. Program related environmental impact could be minimized by adopting appropriate mitigation measures. However, the impacts on natural disasters and other extreme climate events could be reduced by adopting appropriate preparedness and precautionary measure which may include organizing training programs for patients and health care personnel, on disaster/earthquake preparedness, climate adaptation and disaster risk reduction, health safety measures, and environmental awareness, etc. This EARF is thus prepared to establish the mechanism to determine and assess future potential environmental impacts of civil works that are to be identified and cleared based on a participatory demand-driven process, and to set out required mitigation, monitoring, and institutional measures to be taken during implementation and operation to eliminate adverse environmental impacts, or to reduce them to acceptable limits.

4. Considering that the program is expected to have limited and minimum adverse environmental impacts, the program is categorized as "B" for environment. There will be construction of some new school buildings in existing premises and some of the upazila education offices will be in existing premises and the nature of the construction will be quite

simple and straight forward. So, there will be no major adverse impacts on environment. An initial environment examination (IEE)will therefore be required, although environmental implications will be reviewed and required mitigation measure will be adopted and reported semi-annually. SESIP, based on needs assessment and agreed criteria, will support construction of new school buildings, upazila education offices, renovation, repair and maintenance of existing building, provision of safe drinking water, proper ventilation and lighting in the building, adequate sanitation, and drainage facilities. Additionally, program components/"subprojects" may have very minor environmental impacts if not properly designed, executed, and mitigation measures not implemented. The environment assessment will be carried out to ensure that the potential adverse environmental impacts are appropriately addressed in line with ADB's SPS (2009), Environmental Policy (2002), and Environmental Assessment Guidelines (2003). Most of the project impacts would be localized due to the relatively small-scale activities and could be addressed with proper mitigation measures and good housekeeping practices.

5. Based on the information obtained from the environmental screening/assessment, a site-specific EMP will be prepared and implemented. The monitoring activities of the Education Engineering Department (EED) will include verifying compliance with the EMP implementation. The EED through its project monitoring unit is responsible to implement the overall EMP. However, during the construction stage, the contractors are responsible to mitigate all environmental impacts related with the construction activities. In this context, the EMP has been included into the bidding documents of all the construction packages so that it serves as a condition of contract for adopting the Environmental Code of Practices by the prospective contractor(s). The implementation of the EMP and/or Environmental Code of Practices by the contractor(s) is to be supervised by Construction Supervision Consultant in close consultation with EED. EED will be responsible for design, construction and maintenance of the infrastructure of the program. The program proponent will deploy a focal person for environment who will lead the environmental activities and implementation of the EMP. Selected staff of the EED will also be assigned as environmental focal points. The Assistant Engineer at Regional Office will carry out environmental screening of all "subprojects" and prepare an EMP for each project activities or "subproject". The Executive Engineer will review the screening report and EMP through field visits. If an IEE is required, it will be the responsibility of the Executive Engineer of EED. The Monitoring Officer deployed by this project will be responsible for supervision and monitoring of environmental mitigation activities. Training on environmental management and relevant matters is proposed to strengthen at all levels of the Executing Agency including Directorate of Secondary and Higher Education (DSHE), EED & Project Implementation Unit. The suggested training programs include: (i) training on environmental safeguards and compliances; (ii) orientation on environmental planning and management of school and school-facilities; and (iii) mechanisms for coordination and for accessing specific environmental services e.g. water-quality testing, climate resilient school building construction, etc.

6. The Program Director will ensure to conduct meaningful public consultation with affected people and concerned stakeholders, including civil society and facilitate their informed participation. This EARF and proposed IEE (including EMP) will be disclosed to the public according to the ADB's SPS and with required arrangement. The finalized EARF will be disclosed by the DSHE on their website for public comments within 30 days of notice published in the 2 daily national newspapers (one in English and summary of EARF in Bengali). DSHE will establish a procedure to answer queries related to any complains and school in regards to additional physical infrastructure, renovation and/or new construction.

I. INTRODUCTION

A. Program Description

1. Secondary Education Sector Investment Program (SESIP) that supports secondary education in Bangladesh over 10 years, using a multi tranche financing facility (2013-2022). SESIP will support implementation of key reforms envisaged in the National Education Policy (2010) in a phased manner. SESIP will also adopt a Sector Wide Approach that supports a government-led common secondary education program framework with enhanced harmonization of ADB and other development partner's assistance.

B. Physical Infrastructure Development in SESIP

2. Based on needs assessment and agreed criteria, the Program will support construction of school buildings and repair and maintenance of existing schools and stack yards in the school premises. Facilities will support enhanced use of Information and Communication Technology for pedagogy, and include construction/renovation for school information hubs, construction of upazila education offices, and provision of safe drinking water, sanitation and drainage facilities. Major infrastructure of the program is school buildings which will be built on already acquired areas and there is no such structure on ecologically sensitive areas or any of nature reserve. Planning and design section of Education Engineering Department (EED) is responsible for environmental issues of the program.

C. Purpose of the Environmental Assessment and Review Framework (EARF)

3. The Directorate of Secondary and Higher Education(DSHE), in consultation with relevant stakeholders, has prepared this EARF to support the implementing agency, EED, to deal with potential environmental issues that may arise during implementation of the various civil works like strengthened decentralized education management - construction of required number of Upazila Secondary Education Offices, and other subprojects. The purpose of this EARF is to ensure that both the infrastructure, both in terms of needs and quality at neither secondary schools, nor the environment is compromised through the program intervention. The specific objectives of EARF is to specify appropriate roles and responsibilities to carryout environmental screening, mitigation measure, monitoring and reporting related to implementation of subprojects and to avoid or minimize potential adverse environmental impacts and enhance environmental outcomes of the activities implemented under subprojects.

4. This EARF is to guide the environmental assessment activities of future subprojects since details scope of works and locations of civil works are not known at this stage. It provides general policies, guidelines, and procedures to be integrated into the implementation of all infrastructures under the Program. In preparing this document, relevant environmental safeguard practices, compliance, and past experience in the sector were reviewed. The review also included consultations with the associated stakeholders; qualitative and quantitative assessments of environmental safeguard compliance processes in the DSHE; capacity assessment of the implementing agency EED; and information on the capacity of their field level staff. This EARF is intended to be used as a practical tool during school infrastructure planning, design, implementation, and monitoring. The Framework describes the steps involved in identifying and mitigating the potential adverse environmental impacts from infrastructure implementation activities, and other extreme climatic events. EARF ensures protection of health and hygiene of students, environmental sustainability, and welfare of

affected stakeholders. The EARF outlines environmental screening procedures, assessment methodologies, environmental management (mitigation, monitoring and documentation), and reporting for the components of the Program; and to specify institutional structure and mechanism to carryout compliance to environmental management plan.

II. ASSESSMENT OF LEGAL FRAMEWORK AND INSTITUTIONAL CAPACITY

A. Review of National Environmental Policies and Legal Framework of Bangladesh

5. The national policies and legal framework for environmental safeguard requirements relevant to the Program in Bangladesh were described in Bangladesh Country Environmental Assessment 2012[1] and many of the similar EARF documents of the projects in Bangladesh is available in Asian Development Bank's (ADB) website[2] and hence it is not further described in this section. The implementation of the Program related infrastructural works and the other subproject will be governed by ADB's Safeguard Policy Statement (SPS, 2009) and the environmental laws, policies and regulations of the Government of Bangladesh (GOB).

B. Safeguard Requirements of the Government of Bangladesh

6. A wide range of policies, laws and regulations related to environmental issues are in place in Bangladesh. Many of these are cross-sectoral and several of them are directly related to environmental issues. The GOB laws, regulations, and standards for environmental assessment were summarized in several EARF documents of various ADB projects and available in the ADB website.[3] The main provisions for environmental protection and pollution control in Bangladesh are contained in the Environmental Conservation Act (1995) and Environmental Conservation Rules (ECR, 1997). Under the ECR, projects are classified as 'Green', 'Orange A', 'Orange B', and 'Red' to determine the level of environmental assessment required. The category of proposed Program is "'B' for ADB and category 'Orange B' for GOB" because the program does not have any significant adverse impact on environment. 'Category-B' programs are considered relatively minimum environmental impact hence initial environmental examination (IEE) along with environment management plan (EMP) is required to be carried out. An environment clearance certificate (ECC) from the Department of Environment (DOE) is adequate for this program. 'Orange Category' projects fall into two categories. 'Orange A' projects are required to submit general information, a feasibility report, a process flow diagram, and schematic diagrams of waste treatment facilities along with their application for obtaining ECC. Orange B projects are required to submit an IEE report, along with their application and the information and papers specified for Orange B projects. 'Red Category' projects are those which may cause 'significant adverse' environmental impacts and are, therefore, required to submit an Environmental Impact Assessment (EIA) report. It should be noted that they may obtain an initial site clearance on the basis of an IEE report, and subsequently submit an EIA report for obtaining an ECC along with other necessary papers, such as feasibility study reports and no objections from local authorities. The DOE has recently developed simplified IEE and EMP checklists in order to simplify the preparation of conventional and voluminous IEE and EMP reports that contain irrelevant and unnecessary information. Asper ECR '97 all existing and new industries and projects in 'Orange B' and 'Red' category require an EMP to be prepared (after conducting an IEE or EIA) and submitted along with other necessary papers while applying for an ECC.

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[1] Asian Development Bank. 2012. Country Environmental Analysis: Bangladesh. Dhaka.
[2] http://www.adb.org/Projects/reports.asp?docType=EARF&ctry_id=&subj_id=&keyword=&pg=1
[3] http://www.adb.org/projects/documents/search/48306

7. 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 building. In practice, building of more than 10 storied building within Dhaka City (as per building construction rules of RAJUK) and building of more than 6 storied building outside of Dhaka city will be considered as 'Orange B' category. It is expected that the primary schools outside of Dhaka will not be more than 6 storied building and as such, no environmental clearance will be required. If new construction of more than 6 storied building is considered, IEE and EMP would be required to get the environmental clearance from the Department of Environment (DOE) as per ECR'97. In addition, the EARF would need to be submitted to the DOE for their review and concurrence.

8. In addition to the Environmental Conservation Act and Rules, there are a number of other policies, plans and strategies which deal with the water sector, agricultural development, natural resource management, coastal area, protected area, disaster management and climate change. These are the National Water Policy (1999), Forest Act (1927)(last modified 30th April 2000), National Forest Policy (1994), National Conservation Strategy (1992), National Environmental Management Action Plan (1995), National Policy for Safe Water Supply and Sanitation (1998), National Policy for Arsenic Mitigation (2004), National Sanitation Strategy (2005), Coastal Zone Policy (2005),National Food Policy (2006), Coastal Development Strategy (2006), National Agricultural Policy (1999), National Fisheries Policy (1996), National Livestock Development Policy (2007), Standing Orders on Disaster (1999) (revised in 2010), National Adaptation Programme of Action (2005) (revised in 2009),Bangladesh Capacity Development Action Plan for Sustainable Environmental Governance (2007), Bangladesh Climate Change Strategy and Action Plan (2009), National Plan for Disaster Management (2010-2015), Solid Waste Management Rules (2010), Noise Pollution (Control) Rules (2006),etc. The Bangladesh National Building Code (2006) and Bangladesh Labor Act (2006) are also important with regards the occupational health and safety of workers and laborers to be involved in the Project's infrastructure development. Besides these, the Cabinet has approved 'Environment Court Bill 2010' and Bangladesh Wildlife (Preservation) Bill 2010.

9. The National Building Code (2006) and National Labor Act (2006) have defined certain measures to ensure proper safety and work environment as well as the compensation measures to the laborers. By national law, in order to be compensated, contractors must follow and comply with these safety provisions and compensation arrangements. The implementing agency must ensure that the appropriate occupational health and safety provisions have been included in the bidding documents and are being implemented by contractor. Many secondary schools in disaster prone areas are also used as cyclone/disaster shelters for the community. If the school will be considered as shelter, the concerned District Committee should be consulted about its location, gender consideration, and other information. As per the Safe Drinking Water Supply and Sanitation Policy (1998), provision for arsenic, salinity and iron safe drinking water, and adequate sanitation facilities will have to be ensured for schools. The water quality needs to be monitored periodically to ensure that the supplied water is safe for drinking.

C. Safeguard Requirements of ADB

10. All projects funded by ADB must comply with the ADB's SPS (2009) and Operational Manual F1 (2010). The purpose of the SPS is to establish an environmental review process to ensure that projects undertaken as part of programs funded under ADB's loans are environmentally sustainable and sound, are designed to operate in compliance with applicable

regulatory requirements, and are not likely to cause significant environmental, health, or safety hazards.

11. ADB's SPS include operational policies that seek to avoid, minimize, or mitigate adverse environmental and social impacts, including protecting the rights of those likely to be affected or marginalized by the development process. For 'Category A' project an EIA including an EMP is required. For'Category B' an IEE, including an EMP, is required and for 'Category C' an EIA or IEE is not required, although environmental implications need to be reviewed through preparation of a due diligence report.

12. The proposed SESIP has been categorized as "Category B" from environmental point of view and an IEE along with EMP is required to be prepared and disclosed. The assessment will be carried out to ensure that the potential adverse environmental impacts are appropriately addressed in line with ADB's Safeguards Policy Statement (2009). This IEE of SESIP is also would be prepared to meet the requirements of the ADB and DOE for environmental safeguards compliances.

D. Review of Institutional Capacity of Executing and Implementing Agency

13. There is no dedicated environmental focal point in the implementing agency of DSHE. SESIP is mainly responsible for planning, designing and construction of civil works. The Assistant or Sub-Assistant Engineer of the EED will be generally assigned environmental tasks in addition to his/her technical responsibilities. Basic Knowledge on environmental safeguard is also inadequate among the engineer in the EED. There is no institutional setup or position or assigned personnel for looking after environmental safeguards issue. An environment unit shall be established at the central office of the EED. An environmental focal person from the Directorate shall be appointed who shall lead the safeguard desk. The environmental focal person shall cover environmental safeguard issues including mainstreaming of environmental best practices, coordinate environmental management activities in school programs, and facilitate capacity building activities of central and local level stakeholders. S/he will also be responsible for planning, assessment, and implementation of EMP, and monitoring and reporting of environmental safeguards activities in the project. The focal person will coordinate with the DSHE during EMP implementation. Central, regional, district and field level orientation and capacity development projects in ensuring environmental safeguards shall be designed in the program.

III. GENERAL PRINCIPLES FOR EARF

14. Specific "subprojects" It is recommended that a set of environmental principles for the design and construction or renovation of small civil works be agreed upon in the EARF and the details to be described in the Operational Manual to be prepared by EED after approval of Education Institution Construction Policy Guideline with minimum standard in 2014. The EED under the DSHE will follow a set of principles in implementing the infrastructures under this program to ensure environmental sustainability of the project. The general principles of the environmental management in the SESIP will be as mentioned below.

A. General Principles

15. Specific "sub-projects" are not known in advance and this EARF document is prepared to guide the EA/IA to assess the environmental impacts of future 'subproject' of this program., The SESIP will follow a set of principles in implementing the infrastructures to ensure

environmental sustainability of the project. The general principles of the environmental management in the EED will be as mentioned below:

(i) The Program Director or his/herassigned official at the EED will be responsible for overall environmental compliance.

(ii) The Assistant Engineer of EED will be responsible for subproject specific environmental compliance and relevant reporting in EED Screening/assessment in order to prevent adverse environmental impacts and other climate and disaster related risks.

(iii) The Program Director in consultation with DOE will finalize the EMP. ADB will approve the total amount required for implementation of prioritized sub-project activities. Concepts of sub-project includes provision of safe drinking water in salinity intrusion arsenic or iron removal plants, waste management, improved sanitation facilities, provision for solar energy, school plantation and gardening, disaster preparedness program etc. Implementation of these types of subproject activities will promote environmental sustainability and build environmental awareness among students and teachers.

(iv) All the su-bprojects to be funded under the program shall be subject to environmental clearance from the DOE.

(v) Child-friendly (well lighted and proper ventilated) aesthetically pleasing school shall be promoted.

(vi) Provision for adequate sanitation facilities shall be developed for the teachers and students with regular cleaning and routine maintenance. The toilets for girls and boys shall be separate with privacy and water facility.

(vii) The designs should avoid or minimize the need for resettlement of population, as well as the impact on green and recreational areas and buildings of historical or architectural value. If above impacts are unavoidable, resettlement plans, mitigation, and compensatory measures will be included in project costs.

(viii) 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.

(ix) It is assumed that there is likely to be no major harmful impacts on environment from civil construction under the project. However, particularly in the case of Chittagong Hill Tracts, given the remote and inaccessible locations of many areas where carrying costs of building materials could be comparatively high, there should be priority given on the use of locally available building materials (e.g. bamboo and wood). Another, particularly important point in this regard is the preservation of the surroundings ecosystems around the school building which means there should not be any hill cutting and destruction of ecosystem for civil works. Planting of exotic/alien invasive species of trees

will be avoided rather native species will be planted to conserve the native biodiversity and maintain ecosystem integrity.

(x) Design and construction of school building in the vulnerable coastal areas (like Satkhira,Barguna, Cox's Bazar, etc.) will consider 'climate proofing design' (e.g. raising of plinth level for flood, increase strength of building to resist cyclone and storm surge, avoid of river bank erosion, etc.). Alternative solutions and final designs should be subject to expert and community consultation.

(xi) Alternative solutions and final designs should be subject to public and community consultation with special emphasis on students/teachers. The preference of students and teachers will be given priority in designing the infrastructure.

(xii) To minimize public nuisances and noise pollution, construction activities should follow strict environmental guidelines. Construction schedules and the timing of necessary interruption of public utilities should be informed to the students and teacher in advance. Contractor should not use class room and school premises/playing ground to stack construction materials.

(xiii) EED and DSHE, will be responsible for obtaining and ensuring clearance required from government or local government agencies/committees, if necessary.

(xiv) All areas and infrastructure affected during construction should be restored to their original condition, specially sidewalks, green street dividers, green-belt/fence, gardens, sidewalk trees, utilities, and side streets impacted by traffic diversion.

(xv) Annual water quality monitoring of all the installed tube-wells under the project and existing one will be carried out to ensure safe drinking water facilities to the students and teachers. Rain water harvesting, pond sand filters, etc could be promoted where supply of safe drinking water is scarce (particularly in coastal areas due to salinity intrusion).

(xvi) Provision for adequate sanitation facilities for the teachers and students will be made and a mechanism for regular cleaning and routine maintenance will be developed.

(xvii) No program activities will be carried out in disputed lands or lands restricted for development or Environmentally Sensitive/ecologically critical areas.

(xviii) Environment friendly (e.g. solid waste management) and energy-efficient options (e.g. solar lighting of school building) shall be promoted.

(xix) In light of the above and considering the current capacity of the EA/IA, the SESIP will exclude 'Category A' sub-project during selection process of future subprojects.

IV. ANTICIPATED ENVIRONMENTAL IMPACT AND MITIGATION MEASURES

A. General Considerations

16. The contractor's conformity with contract procedures and specifications during construction will be carefully monitored. It is assumed that prime contractors may use sub-contractors without ensuring that they conform to general construction guidelines (good engineering practice and good working practices). Contractors will be made to follow standard construction practices, monitored and supervised by Project Authority.

B. Key Anticipated Environmental Impacts and Proposed Mitigation Measures

17. The program-related anticipated environmental impacts, although very limited, may include drainage congestion/water logging, dust pollution, noise pollution, disruption of natural ecosystem, occupational health hazards due to improper management of construction materials and solid and hazardous waste, risk from poor sanitation system, improper lighting and ventilation system in schools, etc. Due to the vulnerable geographic location, there may be some risks which may include arsenic, salinity and iron contamination in drinking water, natural disaster (earthquake) and extreme climate events (heat wave, cyclone, storm surge, etc.). These impacts are not project-related; rather they are geographically location-related and site specific. Program-related environmental impact could be minimized by adopting appropriate mitigation measures. However, the impacts on natural disasters and other extreme climate events could be reduced by adopting appropriate preparedness and precautionary measure which may include organizing training program for patients and health care personnel, on disaster/earthquake preparedness, climate adaptation and disaster risk reduction, health safety measures, environmental awareness, etc. This EAR is thus prepared to establish the mechanism to determine and assess future potential environmental impacts of civil works that are to be identified and cleared based on a participatory demand-driven process, and to set out required mitigation, monitoring and institutional measures to be taken during implementation and operation to eliminate adverse environmental impacts, or to reduce them to acceptable limits.

18. Some typical environmental impacts and mitigation measures from school infrastructure construction and operation activities are listed in Table 1, which shall be treated as a guide during environmental assessment, EMP preparation, and implementation:

Table 1: Potential Environmental Impact and Mitigation Measures

Category	Potential Environmental Impact/Issue	Possible Mitigation Measures
Occupational Health, Safety and Hygiene	Occupational Health and Safety	• Implement suitable safety standards for all workers and site visitors; • Personal protection equipment for workers, such as safety boots, helmets, gloves, protective clothing, goggles and ear protection; • Provision of adequate healthcare (first aid) and safety facilities within construction sites; • Arrangement of safe drinking water and

Category	Potential Environmental Impact/Issue	Possible Mitigation Measures
		sanitation facilities for the labors; • Arrangement for water spray throughout the construction time; • The standard norms for toilet shall be followed.
Solid and Hazardous Waste Management	Spreading of waste, pungent smell, deterioration of aesthetics, used batteries, laboratory chemicals disposed haphazardly.	• Proper solid waste management system shall be introduced in schools with segregation of waste, and its proper disposal; • Raising awareness on solid waste management with waste minimization, recovery, and recycling; • Safe disposal of hazardous waste; • Ensure that adequate toilet and ablution facilities are provided for the duration of the contract.
Drainage Management	Drainage congestion/water clogging, spread of vector born diseases	• Consider the drainage system of the whole area in subproject design; • Maintain cross-drainage at all times during construction; • Prevent all solid and liquid wastes entering waterways by collecting solid waste and wastewater from brick, concrete; • Drainage facilities will be integrated with water supply options and sanitary latrine facilities in planning and design.
Clearing of trees	Losses of tress and vegetation	• Consider alternation options to reduce the loss of trees and vegetation; • A green fence will be raised with native tree species around the school/TC; • Plant same species of trees and vegetation as compensatory measures.
Stone crushing	Dust and noise pollution	• Spray of water during dry season and in windy conditions; • Immediate compaction after construction of base course; • Cover the stockpiles of fine materials in construction yard; • Plan the work schedule of noise creating activities in consultation of local community; • Employ best available work practices on-site to minimize occupational noise levels.
Soil Erosion	Soil erosion during construction	• Careful arrangement to stop soil erosion by adopting proper protection measure before starting earthworks.
Road blockage	Blocking of roads/ access/approach	• Construction materials and machinery should not be placed in a manner that blocks any roads, paths or local accesses; • Unloading of construction materials should be carried in amanner and time so as to avoid blockage of roads/paths/access; • Waste should not be placed on the roads.

Category	Potential Environmental Impact/Issue	Possible Mitigation Measures
Water Pollution	Water pollution from construction activities	• Prohibit direct disposal of solid and liquid wastage into nearby water body; • Spoil Management Plan should be implemented by the contractor.
Use of wood as construction/cooking materials	Deforestation	• Minimize use of wood for construction; • Use local materials as much as possible; • Innovations shall be integrated in design for making schools more child and environmentally friendly; • Contractor shall supply kerosene or LPG at camps and restrict cooking and heating in firewood.
Proper ventilation	Day lighting and ventilation system	• Adequate windows in proper direction in consultation with students and teachers; • Provision for adequate ventilation in the classrooms and office.
Ensure safe drinking water	Arsenic, iron and salinity contamination in drinking water	• Identify unions and upazilas based on DPHE survey where shallow or deep tube-wells are feasible; • Analyze local surrounding arsenic test results and recommend for tube-wells or not; • Adopt rain water harvesting, pond sand filter, piped water supply in salinity intrusion areas; • After installation of tube-wells, presence of arsenic in the drinking water will be tested and be used only if it satisfies the Bangladesh standard.
Water and sanitation	Selection of appropriate location for water source and sanitary latrine	• Discuss with medical authority to ensure selected schools having drinking water and proper sanitation; • A minimum distance of 15m should be maintained between a tube-well and a latrine to prevent contamination of water resources. In case of shallow shrouded hand tube-wells, this distance should be 20m as horizontal filters are used in this type of tube-wells.
Separate toilets for male and females	Adolescent girls may face serious problem due to lack of separate toilet facility.	• Provide separate toilets at adequate distance between male and females; • Water supply is available in the toilets; • One latrine should be designed for about 30 persons.

Category	Potential Environmental Impact/Issue	Possible Mitigation Measures
Extreme climate events and disasters[4]	Extreme climate (e.g. cyclone, storm surge) and natural disasters (e.g. earthquake), etc. and fire	• Adoption of appropriate adaptation and disaster risk reduction strategy, emergency preparedness and recovery, training/orientation program for health service workers on climate change, disaster and earthquake, etc; • Schools located in the cyclone and earthquake prone areas should be designed and constructed in way to be disaster and earthquake resilient or 'climate-proof'; • Create awareness about natural calamities and extreme climate to students, teachers and parents • Fire safety management and mock drill; • Ensure emergency equipments and facilities like fire extinguisher/water hose, first aid boxes, whistles, torch lights etc.

C. Decommissioning Stage

19. No significant environmental impact is anticipated during de-commissioning stage of the project. The temporary sheds, latrines, etc. would be demolished and shifted from the construction site. The site will be cleared off.

D. Key Responsibility of the Contractor

20. The construction contractor of EED is responsible for the safe environment of the project area during the construction, reconstruction, rehabilitation of building structure, drainages, etc. The responsibilities of the contractor will be as follows:

(i) Provision of adequate healthcare facilities (first aid) within construction sites;

(ii) Training of all construction workers in basic safety; sanitation and healthcare issues; specific hazards of their work; personal protection equipment for workers, such as safety boots, helmets, gloves, protective clothing, goggles and ear protection;

(iii) Clean drinking water to all workers;

(iv) Safe access across the constructions area;

(v) Arrangement for water spray at the construction area throughout the construction time;

(vi) Ensure that no child labor will be deployed;

(vii) Lab wastes will be disposed properly with adopting an appropriate disposal facilities;

(viii) Keep work areas clean and tidy; and

[4] This impact is not project related, rather it is location specific. However appropriate adaptation (e.g. rising of plinth of school building in high flood areas, appropriate building materials for cyclone prone areas, etc.) and preparedness measure (e.g. training, mock drill etc.) will be adopted.

(ix) Ensure that there is adequate provision of correctly marked waste containers made available at convenient, locations for the disposal of wastes.

V. ENVIRONMENTAL ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN

A. Environmental Screening and Categorization of Subprojects

21. An environmental screening using rapid environmental assessment (REA) checklist shall be done to ascertain environmental category of each schooland office infrastructure and other civil works. IEE shall be carried out for 'category B' subproject. IEE will not be required for 'category C' subprojects, but a due diligence report (DDR) shall be prepared. This EARF provides guideline to prepare both IEE report and environmental DDR. An outline of these reports is provided in Annex 3 and 4 to this EARF respectively.

B. Environmental Assessment Procedure

22. The environmental assessment procedure for each subproject infrastructure shall be as follows:

1. Environmental Screening

23. The environmental screening of the subprojects shall be done by using the REA checklist (included as Annex 2). The REA checklist shall be filled prior to detailed design of the proposed investment. Findings of the environmental screening shall conclude if an IEE is required or a brief DDR will be adequate for the infrastructure. The IEE or DDR report shall be attached with detailed design of the infrastructure.

2. Process for Environmental Due Diligence

24. The environmental DDR will be a brief environmental statement of the subproject with only mentions of significant impacts and mitigation measures, if any. The report shall be prepared by adopting following procedure:

(i) **Collection of Information:** Coordination shall be maintained with the focal person of safeguard desk of EED, and technical team for documenting site specific environmental concerns. Local stakeholders, including local government bodies, teachers, and students shall be consulted during documentation of the information.

(ii) **Preparation of environmental due diligence report:** The information on physical, biological, socio-economic, and cultural environment of the subproject area will be compiled in coordination with the technical and social team. The environmental DDR shall be prepared with the REA checklist added with any site-specific and significant environmental impacts.

3. Process to prepare IEE

25. The IEE process shall involve the following:

(i) Scoping and preparation of the Terms of Reference (ToR) for IEE Study. Scoping quickly assess the existing environmental status of the project area, lists the likely environmental impacts, and advise methodology of assessment. The ToR shall be approved by EED before commencing the IEE study.

(ii) An outline of the activities for conducting IEE study is presented below:

a. **Desk Study:** Review of information such as maps, reports, and EARF for the Program. Checklist for collecting site information is also finalized.

b. **Consultations:** Communities and local stakeholders (Chairman and Members of Union Parishad, teacher, students, student guardians, social workers, etc.) shall be consulted by means of Focus Group Discussions. If required, discussion with concerned government offices (Department of Environment; Forest Department; Local Government Engineering Department, Bangladesh Water Development Board, etc.) will also be undertaken.

c. **Field Assessment:** Assessment of the potential and significant environmental concerns shall be done to collect data and analyze any potential impacts.

d. **Sampling and Testing:** Special tests may be necessary in certain cases where water pollution issues need to be investigated (water quality for arsenic or fluoride content, water quality for iron, salinity, etc. and noise level, PM 10/PM12 in air).

e. **Consideration of Alternatives:** The environmental implications of different alternatives will be briefly assessed, particularly focusing on location of infrastructure, design and orientation, method of construction, source of construction materials, and schedule of construction.

f. **Identification of Environmental Impacts and Mitigation Measures:** The impacts will be identified in terms of their significance, extent, reversibility and duration
.

g. **Design of Environmental Monitoring Plan:** The IEE or DDR shall propose EMP where monitoring requirements for potential environmental impacts are identified, mitigation measures prepared, method of mitigation measure developed, indicators suggested, frequency of undertaking monitoring activity decided, cost estimated, and responsible agency for undertaking the monitoring identified. EMP report format and parameters used for environmental monitoring is presented in Annex 6 and 7.

4. Possible Environmental Categorization of the Sub-project

26. The project has been categorized as “B” for environment and thus it is expected to have very limited and minimum adverse environmental impacts. The proposed civil works will be in existing school premises and the nature of the construction will be quite simple and straight forward in nature. However, most of the sub-project impacts would be localized due to the relatively small-scale activities and civil works and could be addressed with proper mitigation measure and good housekeeping practices.

VI. INSTITUTIONAL ARRANGEMENT AND MECHANISM FOR IMPLEMENTATION OF EMP

A. Institutional Arrangement and Mechanism for Implementation of EMP

27. The EED is responsible to implement the overall EMP. However, during the construction stage, the contractors are responsible to mitigate all environmental impacts related with the construction activities. In this context, the EMP has been included into the Bidding Documents of all the construction packages so that it serves as a condition of contract for adopting the Environmental Code of Practices by the prospective contractor(s). The implementation of the EMP and/or Environmental Code of Practices by the contractor(s) is to be supervised by Construction Supervision Consultant in close consultation with the EED.

28. EED will be responsible for design, construction and maintenance of the infrastructure of the project. The project proponent will deploy a focal person for environment who will lead the environmental activities and implementation of the EMP. Selected staff of the EED will also be assigned as environmental focal points. The Assistant Engineer at Regional Office will carry out environmental screening of all “subprojects” and prepare an EMP for each project activities or “subproject”. The Executive Engineer will review the screening report and EMP through field visits. If an IEE is required, it will be the responsibility of the Executive Engineer of EED. The Monitoring Officer deployed by this project will be responsible for supervision and monitoring of environmental mitigation activities. The Chief Engineer at Headquarters will ensure quality control and reporting at the regional level. The Environmental focal point from the EED (may request support from Bangladesh Resident Mission Environment Officer, if required) will prepare training materials; conduct training for staff/school teachers/students; prepare screening, IEE report and site-specific EMP on sample basis; review a certain percentage of the EMPs; and prepare the Annual Environmental Monitoring Reports of the Project and submit annually. The environmental focal person could follow the format provided in the annexes. However, s/he should also include any other parameters (which are not included in the list) that may have significant environmental impacts. The environmental focal point will be responsible for implementation of the EMP and its provisions, including compliance checking, facilitation, coordination and ensuring dissemination, orientations and capacity building activities. Additional human resources or an agency (e.g. DOE) may be engaged, if necessary, in order to effectively implement the EMP. Following Table presents the mechanism of implementation of the EARF.

Table 2: Mechanism for Implementation of EARF

S.N.	Activities	Responsibility	Remarks
1	**Preparation of EARF, its approval, circulation & incorporation in project**		
1.1	Approval of EARF for SESIP	SPSU	ADB and DSHE will follow up

S.N.	Activities	Responsibility	Remarks
1.2	Printing and Publication of EARF in English and summary of EARF in Bengali & its wider circulation	SPSU/DSHE	EED provides EARF guidelines to Engineers and Contractors for implementation.
1.3	Dissemination of EARF through the PIM	SPSU	EED will ensure that stakeholders e.g. Engineers and contractors understand theEARF requirements and EARF provisions are followed while planning and implementation of physical improvement of the schools.
1.4	Incorporation of EARF aspects	SPSU	EED will ensure that EARF is an integral part of decision making for SESIP activities.
1.5	Dissemination of EARF through regular orientation programs organized for Assistant Engineers, Sub-Assistant Engineers, I/NGOs and other partners working in collaboration with PIU.	SPSU/Partner NGOs	All are made aware on how to incorporateEARF provisions in planning and implementing subproject/project components.
2	**Environmental Assessment & Management**		
2.1	Environmental Screening of infrastructure using the REA checklist	SPSU	REA checklist provided in the EARF. Categorize environmental assessment type (IEE).
2.2	Incorporate EARF requirements in subproject preparation guidelines.	SPSU and DSHE in association with BRM	Follow provisions of the approved EARF
2.3	Environmental assessment of the works. Prepare EMP.	DSHE SPSU	Follow the steps given in the approved EARF.
2.4	Incorporation of EMP provisions in contract documents	SPSU	EMP requirements clearly defined in contract agreement and bidding document
2.5	Utilize EARF requirements in civil work (schools and education offices)	SPSU	Follow provisions as advised.
3	**EMP Monitoring**		
	▪ During implementation ▪ Quarterly, feeding into government's quarterly portfolio review meeting ▪ Verification with field visit to representative samples	SPSU	PIU will conduct routine monitoring, document compliance or non-compliance, fill monitoring checklist, and prepare monthly reporting. PIU will check adequacy of environmental safeguards maintained in works. Verifies if EMP recommendations are being complied into subprojects implementation. Consolidate quarterly progress report.
4	**Monitoring & Auditing**		
	Compliance Audit	SPSU	Verifies overall compliance to EARF &

S.N.	Activities	Responsibility	Remarks
	▪ during Implementation ▪ annually		other environmental safeguard requirements.
5	**Annual Reporting & Feedback**		
	▪ Interactions/workshops ▪ Semi-annual reports ▪ Annual reports	(SESIP reports status and environmental functioning of the infrastructure, & recommendations for improvement to PIU)	SESIP will conduct an annual interaction to replicate the best practices.

ADB = Asian Development Bank, BRM = Bangladesh Resident Mission, DSHE = Directorate of Secondary and Higher Education, EARF = Environmental Assessment and Review Framework, EMP = environmental management plan, IEE = initial environment examination, INGO = international non-government organization, NGO = non-government organization, PIM = Project Implementation Manual, REA = Rapid Environmental Assessment, SESIP = Secondary Education Sector Investment Program, SPSU = Sector Program Support Unit,

B. Capacity Development

29. Capacity on environmental management needs to be strengthened at all levels of the executing agency including DSHE, EED, PIU/ SESIP. SESIP will implement capacity building measures through training, exposure visit to ideal school in major divisions. Following capacity development program has been recommended:

Table 3: Proposed Capacity Development Program

Sl. No.	Particular of Activities	Remarks
1.	Orientation of ADB‟s and country specific environmental safeguards and compliance measure	BRM will invite relevant participants nominated by SESIP
2.	Orientation on solid and hazardous waste management (including laboratory wastes)	SESIP will organize training with support from resource person
3.	Orientation on the management of fire safety and earthquake	SESIP will organize training with support from resource person
4.	Training on disaster risk management (e.g. cyclone, flood, storm surge, etc.)	SESIP will organize training with support from resource person
5.	Other capacity building program to EED/DSHE (Training, Research & Development)	Detail Capacity Building Program will be developed by SESIP as per need for EARF implementation
6.	Training on construction of resilient school building	SESIP will organize training for EED Engineers and Contractors with support from resource person

ADB = Asian Development Bank, BRM = Bangladesh Resident Mission, DSHE = Directorate of Secondary and Higher Education, EARF = Environmental Assessment and Review Framework, EED = Education Engineering Department, SESIP = Secondary Education Sector Investment Program

C. Budgetary Requirement

30. A tentative budget for implementation of EARF and EMP will be prepared by the EED. The budget will be required for translation of EARF, implementation of EMP, subprojects, capacity building of the relevant staff on environmental safeguards, remuneration of Environmental Officer, environmental screening, preparation of environmental assessment reports, etc. Training requirements, and cost for implementation of EMP will be prepared in IEE report.

VII. ENVIRONMENTAL MONITORING AND REPORTING AND IMPLEMENTATION OF PROJECT/SUB-PROJECT

A. Environmental Monitoring and Reporting and Implementation Arrangement

31. The primary objective of the environmental management and monitoring is to record environmental impacts resulting from project activities and to ensure implementation of the 'mitigation measures' in order to reduce adverse impacts and enhance positive impacts from specific activities. Based on the information obtained from the environmental screening/ assessment, a site-specific EMP will be prepared and implement. The monitoring activities of EED will include verifying compliance with the EMP implementation. In general, the environmental focal point from the department will monitor the following indicators during mission as 'spot checking' and the related mitigation measures: (i) loss of top soil of agricultural land; (ii) drainage congestion/water logging; (iii) dust and air pollution; (v) surface water pollution; (v) noise pollution; (vii) erosion and siltation; (viii) occupational health and safety practices for workers; (ix) health and safety practices for student, teacher and community; (x) maintenance of water supply and sanitation facilities, (xi) properly maintaining science labs of schools; and (xii) solid and hazardous waste management, etc.

32. A Management Information System will be developed to record the environmental mitigation and monitoring information along with infrastructure development data. A climate change adaptation and disaster risk reduction plan would also be developed, if required.

33. In addition, testing for arsenic, iron and salinity in drinking water will be carried out at required intervals in arsenic/iron/salinity potential areas. 5% of the total water samples will be tested in Department of Public Health Engineering laboratory for quality assurance. A quick monitoring of operation and maintenance of water supply and sanitation facilities shall be conducted by the project office to provide direct feed back to the authority.

34. Implementation of mitigation measures will be ensured through both periodic monitoring. Monitoring activities for project at different phases of implementation will be as follows:

Table 4: A Sample Monitoring Matrix for Various Phases

S.N.	Indicators of Monitoring	Method of Monitoring	Monitoring frequency	Responsibility
A. Pre-construction Phase Monitoring				
1	Printing, publication & distribution of EARF to all stakeholders including translation of the summary of EARF in Bengali	Direct observation	Once	SPSU/DSHE
2	Recruitment of part-time environmental officer for the Project	Review of appointment letter	Once	SPSU/DSHE
3	Incorporation of EARF in subprojects	Review of documents	Once	SPSU/DSHE

S.N.	Indicators of Monitoring	Method of Monitoring	Monitoring frequency	Responsibility
4	Disaster prone area (landslide, flood, drought area) and climate risk (cyclone & storm surge) screening done	Review of documents	Once	EED
5	Incorporation EMP in design and tender document	Direct observation	Once	SPSU/DSHE /EED
B. Construction Phase Monitoring				
1.	Drinking Water Quality	• Sampling, lab testing & comparison with generic standards • For arsenic/iron/salinity, testing follow country specific and or WHO recommended protocols	Annual	**Note:** SPSU *shall coordinate with DPHE, NGO, INGOs working in water & sanitation sectors*
2.	Transportation of construction material in covered condition, and safe loading & unloading of construction materials.	Contractor/Direct Observation	Regular during construction	EED/ Contractor
3.	Water sprinkling in dusty construction area & access roads	Contractor/Direct Observation	Every Day	EED
4.	Stockpiling of excavated materials	Contractor /Direct Observation	Everyday	EED
5.	Reuse of excavated materials	Contractor /Direct Observation	Everyday	EED
6.	Solid waste segregation disposal	Contractor /Direct Observation	Everyday	EED
7.	Clearing of vegetation/ trees	Contractor /Direct Observation	During construction once in 3 months	EED
8.	Noise and dust Pollution	Contractor /Direct Observation	Regular during construction	EED
9.	Occupational health and safety, use of safety gears	Direct Observation	Once a month	EED
10.	Safety to workers, students & teachers	Record of injury	Once a week	EED
11.	Water logging and spread of vector born diseases	Direct Observation	Once a week	EED
C. Operation Phase Monitoring				
1.	Preparation of monitoring reports	Records/Documents	Monthly	EED
2.	Drinking water quality Arsenic testing and mitigation Adequate natural light, air ventilation	Samples taken from different points, source, delivery points Laboratory testing Interview with students	Annual	EED

S.N.	Indicators of Monitoring	Method of Monitoring	Monitoring frequency	Responsibility
3.	Solid waste and lab waste management system	Records of waste collected and managed	Bi-annual	EED
4.	Rainwater harvesting	Observation	Annual	EED
5.	Solar lighting	Observation	Annual	EED
7.	Number of orientation and training	Number of orientation and trainings conducted	Regular	EED
10.	Impact audit	Compliance with EARF	Annual	EED

DPHE = Department of Public Health Engineering, DSHE = Directorate of Secondary and Higher Education, EARF = Environmental Assessment and Review Framework, EED = Education Engineering Department, EMP = environmental management plan, INGO = international non-government organization, NGO = non-government organization, SPSU = Sector Program Support Unit

35. The SPSU will monitor the provisions mentioned in the frameworks to ensure that they are complied with during implementation of the SESIP. The EED will prepare biannual reports on environmental compliance and submit this during the Joint Consultative Mission and Joint Annual Review. In addition, a section on status of environmental safeguard activities will be included in each progress report. DSHE/PIU will carry out annual review to assess how effectively the environmental safeguard requirements have been followed.

B. Consultation and Information Disclosure

36. Consultation and information disclosure will be a continuous process during the preparation of the environmental assessment document and implementation of the EMP. The Program Director will ensure to conduct meaningful consultation with student-teachers, affected people and concerned stakeholders, including civil society and facilitate their informed participation. The meaningful consultation shall begin early in the subproject preparation stage and carried out in an ongoing basis throughout the subproject cycle, timely disclosure in understandable format by the local stakeholders; consultation is organized in congenial environment without intimidation, and is gender sensitive. The process and results shall be documented and incorporated in the environmental assessment report.

37. The Program Director shall provide relevant environmental information, including the IEE to be prepared for each sub-project and environmental monitoring report in a timely manner, and shall keep the reports at accessible place and in a form and language understandable to affected people and other stakeholders. The Program Director shall submit to ADB the final IEE report and environmental monitoring reports for disclosure on ADB's website.

C. Grievance Redress Mechanism

38. DSHE will establish a procedure to answer queries related to any complains and school in regards to additional physical infrastructure, renovation and/or new construction. School Management Committee (SMC) at each school and District Education Office will work as a Grievance Redress Committee (GRC) for hearing the complaints of different stakeholders and for their appropriate resolution. Other than disputes relating to legal rights, it will be reviewed by SMC for all grievances relating to any complain and other interventions. Grievances will be redressed within two to four weeks from the date of lodging the complaints.

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Appendix 1: Outline of Initial Environmental Examination (IEE) Report

I. Executive Summary
II. Project Description (with salient feature)
III. Description of Existing Environment in the Project Area
- Physical environment
- Biological environment
- Socio-economic and physical cultural resources

IV. Potential Environmental Impacts and Mitigation Measures
- Beneficial impacts and maximization measures
- Adverse impacts and mitigation measures

V. Analysis of Alternatives
VI. Institutional Arrangements
VII. Environmental Monitoring and Management Plan (EMP)
VIII. Information Disclosure, Public Consultation and Participation
IX. Grievance Redress Mechanism
X. Conclusion and Recommendations,

Appendix 2: Outline of Environmental Due Diligence Report

1. Introduction: (1 paragraph on the proposed works)

2. Existing Environmental setting (1 page): (a table of salient feature covering local environmental setting of school area which may include physical, vegetative, and social & cultural settings. Disaster risks and indications of potential impacts from climate change will be covered. A sketch showing environmental features of the school and its surroundings to be included)

3. Areas of major concern and mitigation measure: (REA checklist (a format given in annex 4) followed by a list of site-specific environmental impacts, if any, and the proposed mitigation measures for them. Please also refer to Table 1 and attachment 4-design guideline for school building construction from environmental perspective).

4. Conclusion

Appendix 3: Format for preparing Environmental Management Plan

S. No.	**Work Activity**	**Indicative Impacts**	**Proposed Mitigation Measures**	**Cost Estimate** (and the Item Number in BOQ in which the cost is provisioned.)	**Schedule of Implementation**	**Implementing and Supervising Responsibility**

Appendix 4: Environmental Screening Format (REA Checklist)

Project Name: SESIP

Date of Screening: 06/01/2013

Category of component based on GOB environmental regulations:

Name of School……District: ……..Upazila:

Union: ……...Village: ……..

Type of Subproject: ……..

Major Activities under the Subproject: ……

SCREENING QUESTIONS	**Yes**	**No**	**Impact Scale 1=lowest-6=highest**	**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?				
Insufficient drainage leading to water logging?				
Negative effects on surface water quality, quantities or flow?				
Block any road/access/approach?				
Will there be any long term impacts on local hydrology				

SCREENING QUESTIONS	**Yes**	**No**	**Impact Scale 1=lowest-6=highest**	**If "Yes" , please provide REMARKS**
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?				Indicate if an Environmental due diligence is adequate or an IEE level assessment is required.
Is the project will enhance quality of education?				
Score Total				
Type of Environmental Assessment to be Undertaken: **Completed by: Name:……Designation: ……..**				

Filled and signed by EED Assistant Engineer: Name: _____

Date:

Reviewed and signed by EED Executive Engineer: Name: _____

Date:

Appendix 5: Proposed Environment Management Plan

1. General: **Roles and Responsibilities of Functionaries:** All personnel in the Project Team, from the Project Director to site personnel are responsible for protecting the environment by ensuring that environmental protection measures are installed and maintained, and established environmental management systems are followed for all project personnel, environmental responsibilities arise from relevant legislation and approvals.

2. Monitoring Plan: In order to ascertain whether environmental management system is functioning properly it is necessary to include a program to monitor. The EMP will include environmental monitoring procedure based on environmental review study of the SESIP Project of DSHE.

The EMP will focus on the implementation of mitigation measures during project construction period and inside school management as shown in **Table 1.** The project implementation will be carried out under the overall supervision of the Planning and Development Section of EED.

3. Reporting Procedure: **Routine Monitoring on Environmental Performance of the project will be reported by project Division/Consultant of DSHE and copy of the report will be made available to DOE.**

Table – 1 shows the details project activities, its potential environmental impacts, mitigation measures, responsibility and monitoring executor:

Table – 1: Environment Management and Monitoring Matrix

Activity	Environmental Impact	Mitigation Measure	Responsibility	Monitoring Agency
During Construction Phase				
i. Employment of Child Labor in the Construction Activities :	The Environmental and Social Safeguard Policies of the DOE/ADB prohibits all kinds of child labor (lower than 14 years) personnel engagement in construction works of the projects.	Child Labor shall not be employed	Contractor	PD/EED

Activity	Environmental Impact	Mitigation Measure	Responsibility	Monitoring Agency
ii. Use of PPE (e.g., ear protection gear, mask, gloves, goggles, safety shoes, helmet, etc.)is compulsory in order to ensure health and safety of the working labors at the project construction site.	May cause serious injury, to the workers at construction side.	Immediate Supply of PPE like, ear protection gear, mask, gloves, goggles, safety shoes, helmet, etc., to all the labors working at site and impose them to use to avoid any causality.	Contractor	PD/EED
iii. Dumping of spoil materials to the river bed.	Environmental degradation of the river, flow of river also disturbed, People living near the river will face problem due to the river pollution caused by the construction works.	Dumping of spoil material to the river should not be permitted. No activity should be allowed to undertake that can affect the river/stream flow. Should be cleared already dumped material in the river.	Contractor	PD/EED
iv. Firefighting equipment at the Camp, Offices and Sites.	In absence of firefighting equipment may cause serious hazards like life lose, blasting due to fire, .resident house demolish problem due to fire etc.	Immediate placement of firefighting equipment and training or demonstration of firefighting equipment use among the officials, engineers, labors at the site, at the school, at the camp so that in case of any emergency they can utilize these equipment.	Contractor	PD/EED

Activity	Environmental Impact	Mitigation Measure	Responsibility	Monitoring Agency
v. Transport and equipment movement.	Excessive dust polluting to the surrounding environment of the camp and sound pollution due to transport movement in the camp.	Equipment meeting environmental standard in respect of sound should be used in the construction area.	Contractor	PD/EED
vi. Solid Waste at the camp site and also in the schools.	Air and soil pollution in the camp and at the schools.	Human generated solid wastes may be controlled through Motivation, Organize proper collection and transportation of all solid waste, Install proper solid waste disposal system at the camp, at the site and at the schools.	Contractor	PD/EED
vii. Tree plantation at the camp and at the offices.	Positive impacts on the environment.	Tree plantation in the schools, at the camp, and at the offices should be implemented.	Contractor	PD/EED
viii. Construction workers related Impact at the camp and at the construction sites.	Unhygienic and littered environment around the camp, exposure to hazards, transmission of diseases among workers, water-borne diseases to workers.	The local workers should be oriented to hygienic disposal of solid waste, workers should be awarded of hazardous materials and proper handling methods, setup warning signs, label and signals at appropriate locations of the camp,	Contractor	PD/EED
		Pure drinking water facilities should be provided for which no epidemic ever broke out in the construction area.		

Activity	Environmental Impact	Mitigation Measure	Responsibility	Monitoring Agency
ix. Management of excavated and or spoil materials.	It has adverse impacts on the environment if not managed properly.	The excavated materials should be managed and will be safely disposed of so as to avoid landslides and loss of forests and agricultural land.	Contractor	PD/EED
x. Absence of environmental officer of the contractor at the construction sites.	In absence of environmental officer contractor's activities will not go as environment friendly.	Immediate placement of environmental officer.	Contractor	PD/EED
Operation phase				
Xi School Environment	Seating arrangement	Seating arrangement should be comfortable,	Head Master	Upazila Education Office/DSHE
	Interval time	Interval time should be within the tolerable time limit in the classes of the schools ,	--as above--	--as above--
	Waste disposal	Waste disposal been should be in place in the schools room and also at the school centrally.	--as above--	--as above--
	Chemical wastes from science lab	Ensure proper and adequate provision of disposal of chemical wastes from laboratory so that no hazards anticipated.	--as above--	--as above--
	Class rooms	Environment friendly class room should be ensured,	--as above--	--as above--
	Maintain ratio	Teacher and student ratio should be maintained	--as above--	--as above--
	Gender equity	Gender equity should be followed during the admission	--as above--	--as above--
	In absence of First Aid Facilities may occur treatment problem	First Aid Facilities should be available in the schools	--as above--	--as above--

Activity	Environmental Impact	Mitigation Measure	Responsibility	Monitoring Agency
	In absence of firefighting equipment may occur fire hazards,	Firefighting equipment should be available in the schools	--as above--	--as above--
	May occur diarrhea problem if not drinking water is not pure,	Pure drinking water (Arsenic, iron, salinity free) should be provided	--as above--	--as above--
	Absence of electricity lighting fan etc. problem	i. Electricity, Fan, Light should be available in the schools, ii. Energy efficiency light, fan can be used,	--as above--	--as above--
	Ascertain Clean environment by disposal of wastes;	ensure that there is the adequate provision of correctly marked waste containers made available at convenient locations for the disposal of wastes;	--as above--	--as above--
	Smoking	School and classroom should be marked up as “no smoking Zone”	--as above--	--as above--
	Inadequate sanitation facilities will create hygienic problem,	i. Sanitation facilities (wash room, urinal etc.) should be ensured in the schools and Provision of water closet and flushing system in toilet and bathroom and fixing of hand basins and cleanliness. ii. Separate washroom for boys and girls clearly marked up,	--as above--	--as above--
	Suffocation problem if improper ventilation	Provision of adequate ventilation in the classroom of the schools,	--as above--	--as above--

Activity	Environmental Impact	Mitigation Measure	Responsibility	Monitoring Agency
xiii. Management of Lab chemical waste	i. Degradation of surrounding environment / health hazards due to chemical wastes, air and soil pollution	i. Chemical wastes from the laboratory should strictly be discharged to the designated concrete covered pit by the school authority so that surrounding environment not be polluted. ii. A waste management plan should be prepared by the school authority and be followed strictly.	--as above--	--as above--

ADB = Asian Development Bank, DOE = Department of Environment, DSHE = Directorate of Secondary and Higher Education, EED = Education Engineering Department, PPE = personal protective equipment

Appendix 6: Parameters for Environmental Monitoring:

S. N	Issues of monitoring	Parameters	Measurement unit	Quantity	Remarks
1.	Water Pollution	**Turbidity** **Do** **BOD** **pH** **COD** **Arsenic** **Iron** **Coliform,** **Manganese**	**JTU** **mg/l** **mg/l** **-** **mg/l** **mg/l** **mg/l** **n/100ml** **mg/l**	**Once in a year**	**during implementation**
2.	**Air Pollution**	Suspended dust particle Carbon Monoxide Lead SOx NOx	Mg/Nm3 Mg/Nm3 Mg/Nm3 Mg/Nm3 Mg/Nm3	**Once in a year**	**-do-**
3.	**Noise Pollution**	**Shrillness of sound**	**Decibel(db)**	**Once in a year**	**-do-**
4.	**Soil Pollution**	• **Fertility,** • **Presence of hazarders chemicals from laboratory**	**Increase/Decrease**	**Once in a year**	**-do-**

Appendix 7: Compliances Monitoring Report Format:

Environmental Compliances Monitoring Report: During the ongoing of the classroom and during construction time the suggestion/instructions given in the environment report should strongly be monitored by the EED. These instructions and remedial measures summarized and given **in the table** as bellows and will strongly be monitored by the EED and DSHE authority.

Compliances and non-Compliances issues monitoring format at the school environment:

Sl. No.	Concern issue	Recommended measures	Implementation/ Compliances: Yes/No	Remedial Measures
1.	Seating arrangement	Seating arrangement should be comfortable,		
2.	Interval time	Interval time should be within the tolerable time limit in the classes of the schools,		
3.	Waste disposal	Waste disposal been should be in place in the schools room and also at the school central		
4.	Chemical wastes from science lab	Ensure proper and adequate provision of disposal of chemical wastes from laboratory so that no hazards anticipated.		
5.	Class rooms	Environment friendly class room should be ensured,		
6.	Maintain ratio	Teacher and student ratio should be maintained		
7.	Gender equity	Gender equity should be followed during the admission		
8.	First Aid Facilities	First Aid Facilities should be available in the schools		
9.	Fire fighting	Firefighting equipment should be available in the schools		
10.	Pure drinking water	Pure drinking water (Arsenic free) should be provided		

11.	Electricity	Electricity, Fan, Light should be available in the schools, ii. Energy efficiency light, fan can be used,		
12.	Disposal of wastes;	ensure that there is the adequate provision of correctly marked waste containers made available at convenient locations for the disposal of wastes;		
13.	Smoking	School and classroom should be marked up as “no smoking Zone”		
14.	Sanitation facilities	Sanitation facilities (wash room, urinal etc.) should be ensured in the schools and Provision of water closet and flushing system in toilet and bathroom and fixing of hand basins and cleanliness.		
15.	“	Separate washroom for boys and girls clearly marked up,		
16.	ventilation	Provision of adequate ventilation in the classroom of the schools,		
17.	Domestic sewage	Domestic sewage from the class room shall be subject to suitable treatment prior to discharge in to environment. Under no circumstances untreated wastes shall be discharged into the environment.		
18.	Praying room	Praying room should be ensured in the school and also separate for men and women.		
19.	Management of Lab chemical waste	i. Chemical wastes from the laboratory should strictly be discharged to the designated concrete covered pit by the school authority so that surrounding environment not is polluted. ii. A waste management plan should be prepared by the school authority and be followed strictly.		

Compliances and non-Compliances issues monitoring format for the construction site:

1.	toilet and ablution facilities	Ensure that adequate toilet and ablution facilities are provided at the construction site,		

2.	Environment officer	Contractor should appoint an environment officer to monitor the issues recommended in the mitigation measures to make the project environment friendly.		

Appendix 8: Environment Management Cost

1. The Secondary Education Sector Investment Program is yet to be finalized the selection of schools for reconstruction and renovation under the project,so actual cost also is yet to be finalized.