

**ADDITIONAL INFORMATION TO PROGRAM SAFEGUARD SYSTEM ASSESSMENT**

**ASSESSMENT OF TVET SAFEGUARD SYSTEM WITH ENVIRONMENTAL SAFEGUARD POLICY PRINCIPLES OF ADB**

ADB Policy Principle	Triggered by the Program	Gap Analysis	
		Congruence Between TVET System and SPS Environmental Safeguard Requirements	Assessment of Implementation Capacity
1. Use a screening process for each proposed project, as early as possible, to determine the appropriate extent and type of environmental assessment	Yes	<p>The NEA of 1980, its 1988 amendment and Gazette Extraordinary No 772/22 and No 11064 of 1993 provide for screening of each proposed project by a project proposer (PP). The project proponent needs to submit preliminary information about the project to PAA in order to initiate the EIA / IEE process. The project proponents are advised to submit preliminary information at a very early stage in the project cycle. The project proponent could submit the preliminary information through a Basic Information Questionnaire which could be obtained from the CEA Head Office or Provincial / District Offices or downloaded from the CEA website.</p> <p>As in case of SPS screening criteria, NEA screening guidelines use the type, scale and magnitude of the proposed project as well as its location in determining the category – prescribed or non-prescribed. If the category is ‘prescribed’ then the PAA decide whether EIA or IEE should be prepared as part of environmental assessment process. Thus SPS environmental safeguard policy principle is congruent with that of Sri Lanka’s screening process which is applicable to SSEP.</p>	The CEA and PAAs have done this satisfactorily over the past 20 years. The capacity in screening and categorization is present and adequate
2. Conduct an environmental assessment for each proposed project to identify potential	Yes	PAA provides the TOR for environmental assessment. PAA guide PP to select qualified experts to do necessary fieldwork and	MYASD does not have required environmental safeguard expertise. Through hiring

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direct, indirect, cumulative, and induced impacts and risks to physical, biological, socioeconomic and physical cultural resources in the context of the project's area of influence		consultations. SSEP limits its activities to subprojects with limited adverse environmental impacts and will prepare only IEEs. This is the low threshold of 'prescribed' projects. The regulatory system applicable to SSEP is adequate for this task.	qualified specialists to Safeguard Cell and outsourcing the conduct of environmental assessment to competent agencies or persons, this weakness could be overcome. The anticipated adverse environmental impacts of SSEP are not significant. MYASD displays a high awareness about potential negative environmental impacts of the Program
3. Examine alternatives to the project's location, design, technology, and components and their potential environmental and social impacts and document the rationale for selecting the particular alternative proposed. Also consider the no project alternative	Partially Yes	Not applicable to the Program's college refurbishment activities as it will have all construction works at current sites. If new sites outside the college premises are selected for construction this principle would trigger. The local environmental regulatory framework through PAA provides sufficient guidelines on examining alternatives to the project location, design, and technology.	See above
4. Avoid, and where avoidance is not possible, minimize, mitigate, and/or offset adverse impacts and enhance positive impacts by means of environmental planning and	Yes	See note on Principle 1 above. Each 'prescribed' subproject with environmental impacts will require an EIA or IEE and an EMP. The environmental regulatory framework provides limited directions on the actual formation of IEE and EMP when compared with ADB's safeguard requirements, although through TOR, PAA provides guidance for	During consultations and field visits, it was observed that some mitigation measures included in previous Programs have not been fully implemented at the college level. The main areas where

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management. Prepare an EMP that includes the proposed mitigation measures, environmental monitoring and reporting requirements, related institutional or organizational arrangements, capacity development and training measures, implementation schedule, cost estimates, and performance indicators		IEE and actions to overcome the adverse environmental impacts. The Program's ESMF will provide sufficient and comprehensive guidance in this regard. The EMP is considered an integral part of IEE and is not submitted separately to PAA for review. IEE includes all action plan to overcome adverse impacts. Under SSEP, a format of an EMP is provided and listed in ESMF (annex 6).	mitigation had not been fully accomplished include water and sanitation, hazardous waste management, provisions for laboratory safety, and health and safety measures during constructions. Management of mitigation measures needs to be addressed during the planning phase and during supervision of works. Capacity building measures such as the appointment of the Safeguard Cell at MYASD and conduct of safeguard training programs have to start before the commencement of the Program.
5. Carry out meaningful consultation with affected people and all other stakeholders. Continue consultations during project implementation	Yes	The environmental regulatory framework provides limited opportunity for consultation with APs and other stakeholders although consultations are part of IEE/EIA formulation and approval under NEA. It limits to presenting comments, complaints and recommendation as the IEE review phase. 21 days are given for such public response in case of an IEE. PAA could hold a public hearing to ascertain facts and to get affected persons views and recommendation which will be incorporated into IEE when final document is prepared. Consultation during implementation of a project is the responsibility of PP and PAA.	There is no institutional vehicle to ensure consultation with all stakeholders at MYASD or at its affiliated institutions or colleges. This needs development as part of capacity development. The establishment of the Safeguard Cell and appointment of focal safeguard officer at each affiliated institution and collage would resolve this capacity deficiency.

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6. Disclose a draft environmental assessment (including the EMP) in a timely manner, before project appraisal, in an accessible place and in a form and language(s) understandable to affected people and other stakeholders. Disclose the final environmental assessment, and its updates if any, to affected people and other stakeholders	Yes	Environmental regulatory framework directs PAA to disclose draft EIA/IEE to the public and to seek their views, comments and recommendations. Public meetings could be organized by PAA for public hearing. The Framework however does not provide for the disclosure of final EIA/IEE to the public.	To enable MYASD, its affiliated institutions, and colleges to ensure timely disclosure of safeguard processes and documentation in local languages, it is necessary to build institutional capacity through the establishment of the Safeguard Cell at MYASD and safeguard training at subproject level. The training has to extend to PAAs and to Municipal Engineering Departments that will handle the Building Permit applications.
7. Implement the EMP and monitor its effectiveness. Document monitoring results, including the development and implementation of corrective actions, and disclose monitoring reports	Yes	Limited scope in the local regulatory framework to monitor the implementation of actions in EIA/IEE and the formulation of corrective actions, if required. The ESMF has elaborated these requirements and provide guidance on this aspect.	EMPs are currently seldom parts of the contract documents in the Building Permit process. Hence, the probability that contractors follow good Safeguard practices is low. Training and capacity building is needed on the implementation of the EMP, particularly at the Municipal Engineering Departments which handles Building Permit applications.

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8. Do not implement project activities in areas of critical habitats. If a project is located within a legally protected area, implement additional programs to promote and enhance the conservation aims of the protected area. Use a precautionary approach to the use, development, and management of renewable natural resources	No	<p>The regulatory framework provides for the protection of critical habitats and environmentally sensitive areas.</p> <p>In the case of SSEP if new sites are considered, the sites will always be on government land. Hence, no development will be planned in sensitive areas, as CEA will not approve such proposals without special precautions and requirements. Projects in environmentally sensitive areas will fall into EIA category of 'prescribed' projects under NEA 1980.</p>	Not applicable to SSEP
9. Apply pollution prevention and control technologies and practices consistent with international good practices as reflected in internationally recognized standards such as the World Bank Group's Environmental, Health and Safety Guidelines. Adopt cleaner production processes and good energy efficiency practices. Avoid pollution, or, when avoidance is not possible, minimize or control the intensity or load of pollutant emissions and discharges, including direct and indirect greenhouse gases emissions, waste generation, and release of hazardous materials from	Yes	<p>NEA provides sufficient instructions in this regard. Environmental regulatory framework generally meets the World Bank Group's Environmental, Health and Safety Guidelines.</p> <p>ESMF will have elaborated them further.</p>	The general recommendation for more training and capacity building for all stakeholders involved is valid also for this item.

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their production, transportation, handling, and storage. Avoid the use of hazardous materials. Purchase, use, and manage pesticides based on integrated pest management approaches and reduce reliance on synthetic chemical pesticides			
10. Conserve physical cultural resources and avoid destroying or damaging them by using field-based surveys that employ qualified and experienced experts during environmental assessment. Provide for the use of "chance find" procedures that include a pre-approved management and conservation approach for materials that may be discovered during project implementation	No	<p>The environmental regulatory framework provides for the conservation of physical cultural resources and to protect such resources</p> <p>Not applicable to refurbishment of existing buildings under SSEP. If new sites are considered, the sites will always be on government land. Hence, no development will be planned in a sensitive or "unexplored" area</p>	Not applicable to SSEP
11. Provide workers with safe and healthy working conditions and prevent accidents, injuries and disease. Establish preventive and emergency preparedness and response measures	Yes	The local laws and procedures cover sufficiently these aspects.	The implementation is poor due to lack of proper training, financial resources. Need better training on safety of workers and communities and resources to buy equipment and maintain them.

### ACTION PLAN

Identified Gap	Proposed actions	Indicators / targets	Responsibility	Target groups	Time frame
The lack of training on environmental and social safeguards and their implementation at all levels of MYASD and local governments	<ul style="list-style-type: none"> <li>a) Institutional capacity building training programs at MYASD and its affiliate institutions</li> <li>b) The trained personnel act as trainers at the next level, e.g., at college level.</li> <li>c) Assignment of officers at MYASD, affiliated institutions and at colleges responsible for safeguard compliance</li> <li>d) Distribute safeguard handbooks with checklists</li> <li>e) Creation of a 'Safeguard Cell' at MYASD to coordinate safeguard matters at all levels</li> </ul>	<ul style="list-style-type: none"> <li>a) A 'Safeguard Cell' at MYASD established and a safeguard focal person at each of its affiliated institutions appointed</li> <li>b) The focal person trained in safeguards and their compliance at each college</li> <li>c) Database at MYASD on safeguard issues, performance monitoring</li> <li>d) Safeguard personnel have TORs and dedicated budgets</li> <li>e) Booklets in Sinhala and Tamil distributed among all colleges</li> </ul>	<ul style="list-style-type: none"> <li>a) MYASD</li> <li>b) MYASD and affiliated Institutions</li> <li>c) MYASD or assigned organization</li> <li>d) MYASD</li> <li>e) MYASD</li> <li>f) MYASD</li> </ul>	<ul style="list-style-type: none"> <li>a) A) MYASD and Institutions</li> <li>b) Colleges</li> <li>c) MYASD, Institutes and Colleges</li> </ul>	Within 6 months from the Program inception
IEEs and EMPs are not formulated and implemented in building permit process	<ul style="list-style-type: none"> <li>a) MYASD and its affiliated institutions monitor the formulation and implementation of IEE and EMP</li> <li>b) IEE and EMP are a precondition for financial support if environmental impacts identified in a subproject</li> </ul>	<ul style="list-style-type: none"> <li>a) Project screening tools are available at TVET centres</li> <li>b) Standard IEE and EMP templates are adapted and distributed among all affiliated institutions, colleges and local government agencies</li> <li>c) IEE and EMP prepared</li> </ul>	<ul style="list-style-type: none"> <li>a) MYASD</li> <li>b) Affiliated institutions</li> <li>c) Colleges</li> </ul>	<ul style="list-style-type: none"> <li>Local government agencies</li> <li>Colleges</li> </ul>	Before the commencement of construction works of any subproject.

Identified Gap	Proposed actions	Indicators / targets	Responsibility	Target groups	Time frame
	c) MYASD Safeguard Cell monitors the formulation and IEE and implementation of EMP	for each subproject with monitoring indicators			
Poor or lack of interaction and exchange of safeguard information, requirements of subprojects between MYASD/ institutions and colleges	Special seminars/workshops for the heads of affiliated institutions/colleges conducted by a safeguard specialist in English, Sinhala and Tamil	a) Established standard safeguard procedures for the Program b) Program personnel have a common understanding of safeguard requirements c) Records and summaries of training	MYASD Affiliated Institutions	Safeguard personnel of MYASD, Affiliated institutions, and Colleges	Within six months after the commencement of the Program
Poor standard of knowledge among college students about safeguard issues and best practices	a) Lessons on safeguard best practices and their applicability in various TEVT programs included in training programs b) Demonstrations on what happens when safeguards are ignored or not complied with c) Include basic safeguard practices in the college curricula	a) Records of training sessions on Best Practices b) Summaries of key topics, findings and recommendation distributed among colleges in printed and electronic form	MYASD Institutes Colleges	a) College students b) Local government officials	Start during the first 12 months and continue during Program's life
Lack of arrangements for consultations at preparation and implementation phases of subprojects with all stakeholders	a) Subproject level consultations will be carried out as part of the initial project identification b) College development Committees consult stakeholders during	a) Record of consultation and decisions b) Record of implementation of decisions c) High participation of community in college	a) College managers b) College Development Committee	a) Communities in the vicinity of colleges b) Local government personnel c) College	a) During planning phase b) During implementation phase



Identified Gap	Proposed actions	Indicators / targets	Responsibility	Target groups	Time frame
	implementation phase	enhancement activities.		students	
Lack of training materials in Sinhala and Tamil	<p>Manuals, handbooks, and checklists to be produced on environment and social safeguard issues</p> <p>CEA/SLRM ensures the quality and scope of such documents.</p>	<p>a) List of manuals, handbooks, and checklists in Sinhala and Tamil</p> <p>b) Record of distribution of documents among colleges and local governments</p>	<p>MYASD</p> <p>Affiliated institutions</p> <p>SLRM</p>	<p>Trainers at Institutes and Colleges.</p> <p>Students</p> <p>Local governments</p>	Within six months after the Program start.
Lack of coordination between MYASD and the private sector	<p>a) Create interactions between MYASD and private sector institutions on safeguards</p> <p>b) Share knowledge on safeguards and their implementation</p>	<p>c) Participation of the private sector in college activities to demonstrate current Industrial Standards to students</p> <p>d) Records of sharing of safeguard better best practices and experience</p>	MYASD	<p>a) Safeguard Cell personnel at MYASD</p> <p>b) Safeguard personnel at collages</p> <p>c) Private sector personnel</p>	Within 2 years from the inception of the Program

### CONSULTATIONS WITH PROGRAM STAKEHOLDERS

Day/Time	Office / Place	Persons	Position
Several meetings on different days	MYASD: Ministry of Youth Affairs and Skills Development <a href="http://www.youthskillsmin.gov.lk/">http://www.youthskillsmin.gov.lk/</a>	Mr. Samantha Wijayasinghe Mr. A.R. Desapriya	Director (Vocational Training) Additional Secretary (Vocational Training)
16 September pm	VTA: Vocational Training Authority <a href="http://www.vtasl.gov.lk">www.vtasl.gov.lk</a>	Colonel Dharshana Ratnayake Mr. W.D. Fernando Mr. K.J. Korralage Mr. E.A.D.S. Senarathne	Chairman / CEO Director (Training) Director (Testing and Evaluation) Assistant Director (Construction)
17 September am	DTET: Department of Technical Education and Training <a href="http://www.techedu.gov.lk">www.techedu.gov.lk</a>	MR D.V.P.Y. Kulatunga  Mr. WijithaWarnasuriya and others	Additional Director General Deputy Director (Special Projects)
17 September pm	NAITA: National Apprenticeship and Industrial Training Authority <a href="http://www.naita.gov.lk/">www.naita.gov.lk/</a>	Mr G.H. Nilantha de Silva Mr. P.N.K. Dias	Deputy Director (Training) Deputy Director (Quality)
18 September am	NYSC: National Youth Services Council <a href="http://www.srilankayouth.lk/">www.srilankayouth.lk/</a>	Mr. Manula Chamal Perera Mr. Tikiri Banda Mr. Ranjith Silva Mr. Rashitha Delapola and others	Director (Administration) Assistant Director (Vocational Training) Assistant Director (Examination) Consultant (International Affairs)
19 September	Public holiday		
20 September am	MYASD: Ministry of Youth Affairs and Skills Development	Mr A.R. Desapriya	Additional Secretary
20 September pm	NIFNE: National Institute of Fisheries and	Mr S.M. Samarakoon Mr. P.U.I. Perera	Director (Finance) Deputy Director (Training)

Day/Time	Office / Place	Persons	Position
	Nautical Engineering (Ocean University) <a href="http://www.ocu.lk">www.ocu.lk</a>	Mr R.P. Abeykoon Mrs. Indunil Senanayake	Engineer Instructor
21 -- 22 September	Weekend		
23 September	Field Trips to seven (7) colleges in Kalutara, Galle, and Matara districts Local Government in Galle	Mr. Prabath Balasuriya  Mr. Dhamithe Dissanayahe and others	Director, College of Technology, Galle  Municipal Engineer
24 September	Field Trips to eight (8) colleges Hambantota and Ratnapura districts		
25 September am	CEA: Central Environment Authority <a href="http://www.cea.lk/">http://www.cea.lk/</a>	Dr Saranga Alahapperuma	Director General
25 September pm	UNIVOTEC: University of Vocational Technology <a href="http://www.univotec.ac.lk/">www.univotec.ac.lk/</a>	Dr T.A. Piyasiri	Vice Chancellor

**FIELD VISITS (SEPTEMBER 2013)**

#	District	College / Organization	Organization	# of students (approx)	Comments
01	Kalutara	Horana	VTA	87	
02	Kalutara	Panapitiya	VTA	34	
03	Kalutara	Kalutara Technical College	DTET	800	
04	Galle	Technical College, Balapitiya	DTET	600	
05	Galle	Urawatta	VTA	30	
06	Galle	College of Technology, Galle	DTET	3,000	
07	Galle	City Engineering Department	Municipal Government, Galle		
08	Matara	Ruhunugama	VTA	35	
09	Hambantota	Weerawila Hotel School	VTA	28	
10	Hambantota	Technical College, Weerawila	DTET	350	
11	Hambantota	Angunakolapelessa	VTA	50	
12	Hambantota	Welipitiya	VTA	24	
13	Rathnapura	Mahaweli Centre, Embiliditiya	VTA	35	
14	Rathnapura	Bodhiraja - Hinguru ara	VTA	54	
15	Rathnapura	Godakawela	VTA	45	
16	Rathnapura	College of Technical, Rathnapura	DTET	1,100	
17	Colombo	National Vocational Training Institute Narahenpita	VTA		

### ENVIRONMENTAL MANAGEMENT PLAN (EMP)

	Environmental impacts	Mitigation measure(s)	Monitoring sources	Responsible party(ies)
<b>1. PLANNING PHASE</b>				
<b>a) Forest Land</b>	<p>Damage to vegetation and ecosystems</p> <p>Contributing to potential flooding</p> <p>Sedimentation of streams and surface water</p> <p>Contamination of water supplies</p> <p>Biodiversity loss</p>	<p>Design so as to minimize clearing or disturbance</p> <p>Avoid destroying rare or unique species</p> <p>Consult with local populations about current use of forest and preferences for preservation</p>	<p>Evaluation of designs and plans</p> <p>Observation and reporting</p>	<p>Head, College</p> <p>Divisional Engineer/TO</p> <p>Contractor</p> <p>Forest Department, CEA</p>
<b>b) Wetlands</b>	<p>Damage to ecosystems</p> <p>Sedimentation of streams and surface water</p> <p>Contamination of water supplies</p> <p>Biodiversity loss</p> <p>Contributing to flooding potential</p>	<p>Find alternative site. Wetlands and riparian ecosystems (those sited next to a body of water) are extremely sensitive. Wetlands provide important environmental services such as water storage, bird and animal habitat, flood control, and filtering toxins and nutrients from runoff</p> <p>If no alternative is available:</p> <p>Set back any infrastructure as far as possible from the water body/wetland and minimize the amount of wetland destroyed by infrastructure construction</p> <p>Re-vegetate as soon as possible</p>	<p>Evaluation of designs and plans</p> <p>Observation and reporting</p>	<p>Head, College</p> <p>Divisional Engineer/TO</p> <p>Contractor</p> <p>Sri Lanka Land Reclamation and Development Corporation</p>
<b>c) Hilly landscape with sloppy terrain</b>	<p>Sedimentation of streams and surface water.</p> <p>Contamination of ground and surface</p>	<p>Design facility and apply construction practices that minimize risks, e.g., use sand stacks or hay to control</p>	<p>Evaluation of designs and plans.</p>	<p>Head, College</p> <p>Divisional Engineer/TO.</p>

	<b>Environmental impacts</b>	<b>Mitigation measure(s)</b>	<b>Monitoring sources</b>	<b>Responsible party(ies)</b>
	<p>water supplies</p> <p>Cause erosion and damage to terrestrial and aquatic ecosystems during construction or use</p>	<p>erosion during construction</p> <p>Pay particular attention to potential erosion and redirection of water flows during design and construction. Re-vegetate as soon as possible</p> <p>Maintain design features</p>	<p>Observation and reporting</p>	<p>Contractor</p>
<b>d) Site prone to flooding</b>	<p>Be destroyed and/or subject workers or inhabitants to risk of injury or death</p> <p>Cause environmental damage from accidental release of toxic, infectious or otherwise harmful material during flooding</p> <p>Contaminate drinking water</p>	<p>Find alternative site or design infrastructure so it is raised above flood plain, if possible. Design infrastructure to minimize risk, e.g. design with proper grading and drainage</p> <p>Maintain design features such as drainage structures</p> <p>Avoid constructing sanitation or other facilities that will use and store harmful materials at flood-prone areas</p> <p>Chose dry sanitation options or closed disposal systems, instead of wet ones such as septic tanks or detention ponds</p>	<p>Evaluation of designs and plans</p> <p>Observation and reporting</p>	<p>Head, College</p> <p>Divisional Engineer/TO</p> <p>Contractor</p>
<b>e) Area and/site prone to landslides</b>	<p>Expose workers or inhabitants to risk of injury or death</p> <p>Cause environmental damage from accidental release of toxic, infectious or otherwise harmful material</p> <p>Contaminate water supplies</p>	<p>Find alternative site on stable ground if not possible</p> <p>Design infrastructure to minimize risk, e.g., plant trees all around facility</p> <p>Maintain protective design features</p> <p>Avoid constructing sanitation or other</p>	<p>Evaluation of designs and plans</p> <p>Observation and reporting</p>	<p>Head, College NBRO</p> <p>Divisional Engineer/TO</p> <p>Contractor</p>

	<b>Environmental impacts</b>	<b>Mitigation measure(s)</b>	<b>Monitoring sources</b>	<b>Responsible party(ies)</b>
		<p>facilities that will use and store hazardous or bio hazardous materials at landslide-prone sites</p> <p>If that is not possible:</p> <p>Design storage area so that hazardous materials are stored in leak- proof containers</p> <p>Chose dry sanitation options or closed disposal systems, instead septic tanks</p>		
<b>f) Cutting trees for clearing land as well as for materials for reconstruction</b>	<p>Loss of trees and vegetation may lead to:</p> <p>Disaster related issues (i.e. soil erosion, landslides)</p> <p>Lack of ventilation and shading to students and teachers</p>	<p>Consider alternate options to reduce the loss of trees and vegetation</p> <p>A green fence will be raised with native tree species around the school/TC</p> <p>Plant the same species of trees and vegetation as compensatory measures</p> <p>Minimize use of wood for construction</p> <p>Use local materials as much as possible</p> <p>Innovations shall be integrated in the design plan</p> <p>Make schools more child and environmentally friendly</p> <p>Contractor shall supply kerosene or LPG at camps and restrict cooking and heating using firewood</p>	<p>Trees planted</p> <p>Progress reports</p>	Head, College

	<b>Environmental impacts</b>	<b>Mitigation measure(s)</b>	<b>Monitoring sources</b>	<b>Responsible party(ies)</b>
<b>d) Worker welfare facilities at the construction site</b>	Lack of proper worker welfare facilities including toilets, meal room, first aid etc may lead to social issues within the school community and lack of worker satisfaction and safety	<p>Worker welfare facilities to be included in the design and construction plan</p> <p>Provision of temporary toilet with washing facility for the construction worker</p>	Check for such facilities on construction site	<p>Head, College Divisional Engineer/TO</p> <p>Contractor</p>
<b>h) Disaster Management</b>	Extreme climate (e.g. cyclone, storm surge) and natural disasters (e.g. earthquake), etc. and fire may cause damages to lives and properties	<p>Adoption of appropriate adaptation and disaster risk reduction strategy, emergency preparedness and recovery, training/orientation program for teachers and students on climate change, disaster and earthquake, etc.</p> <p>Construction of school/TC with disaster/cyclone shelter to cover the urgent needs of community, student, and teachers</p> <p>School building located in the cyclone and earthquake prone areas should be designed and constructed in way to be disaster and earthquake resilient or “climate-proof”</p> <p>Create awareness about natural calamities and extreme climate to teachers and students</p> <p>Fire safety management and mock drill</p> <p>Ensure emergency equipment and facilities like fire extinguisher/water hose, first aid boxes, whistles, torchlight's etc</p>	Disaster Management Plan for the School	<p>Head, College</p> <p>Disaster Management Centre</p>



<b>2. DESIGN PHASE</b>				
a) Provision of health and sanitary services in school	<p>Discharge untreated or insufficiently treated sewage would result in:</p> <p>Contaminates drinking water (ground and surface)</p> <p>Spreads diseases</p> <p>Degrades aquatic ecosystems</p>	<p>Number of sanitary facilities complies with Ministry of Education's standards</p> <p>Obtain building certification standards and requirements of the local authority</p> <p>Avoid sites where water table is high or underlying geology makes contamination of groundwater likely</p> <p>Choose dry sanitation options or closed disposal systems instead of wet ones such as septic tanks or detention ponds</p> <p>Ensure adequate and maintained sanitary facilities. Maintain required ratio of male/female toilets</p> <p>Maintain the drainage system cleanly without water logging</p>	<p>Check whether there is building certification for the school sanitary facility</p> <p>Check whether there is adequate number of sanitary facilities provided with respect to the student population</p>	<p>Head, College Divisional Engineer/TO</p> <p>Contractor</p>
<b>b) Construction of Science Laboratory</b>	<p>Expose workers or student population to toxic, carcinogenic and teratogenic materials such as heavy metals, dyes, solvents, acids, etc.</p> <p>Lack of properly designed disposal mechanisms for chemical waste may lead to contamination of surface and ground water resources</p> <p>Lack of safety measures within the design will lead to fire and increase occupational safety hazards</p>	<p>Design with proper storage, handling and treatment facilities</p> <p>Avoid site near wetlands or bodies of water</p>	<p>Review the design plans and inspect the sitting of the building initially</p>	<p>Head, College Divisional Engineer/TO</p> <p>Contractor</p>
<b>c) Construction of sports grounds</b>	<p>Water logging may subject workers or student to risk of injury or death</p>	<p>Adopt a well-planned drainage system to avoid water logging</p>	<p>Site visit and observation air quality monitoring</p>	<p>Head, College Initially Divisional</p>

	<b>Environmental impacts</b>	<b>Mitigation measure(s)</b>	<b>Monitoring sources</b>	<b>Responsible party(ies)</b>
	Will be a breeding ground for mosquitoes and other vectors due to flooding	During level and land transformation adopted mitigation measures to avoid dust generation  Take measure to limit particulate emission and noise generation		Engineer/TO  Contractor
<b>3. DEMOLITION PHASE</b>				
<b>a) Refurbishment /renovation of school facilities</b>	Spoil material generated would obscure the landscape may be a health risk to the surrounding community and the student population	Deposal of solid waste according to the guidelines of the local authority  Make arrangements with the local authority for disposal of waste  Demarcate an area for waste collection until deposal within the construction premises and practice waste minimization practices such as recycling and composting	Spot check and site observations on a quarterly basis	Head, College Divisional Engineer/TO  Contractor
<b>b) Safe handling of asbestos</b>	Health and safety hazards with loose asbestos fibers for the workers	Follow the rules outlined in the NEA. (Guidelines are also provided as part of the ESMF)  Where needed, only bonded asbestos cement sheeting that contains less than 20% of asbestos should be used in any construction under this project		Divisional Engineer/TO  Contractor

	Environmental impacts	Mitigation measure(s)	Monitoring sources	Responsible party(ies)
<b>4. CONSTRUCTION PHASE</b>				
<b>a) Expansion of School facilities involving new construction within already existing school premises</b>	<p>Lack of solid waste management on site can lead to the lack of general cleanliness due to waste material resulting from the demolition of old buildings</p> <p>The waste material would be hazardous to the children's health and safety (i.e. injuries from corroded metal waste)</p>	<p>Make arrangements with the local authority on disposal of solid waste generated during construction</p> <p>Observations on cleanliness and good housekeeping practices onsite. Demarcated waste storage area in operation</p> <p>Under no circumstances should the solid waste be burned on site</p>	<p>Solid waste storage is demarcated</p> <p>All construction solid waste removed at end of construction</p>	<p>Head, College Divisional Engineer/TO</p> <p>Contractor</p>
	Dust generation during construction activities may impact workers and community	<p>Wet down and spray water in construction as required</p> <p>Take steps to avoid dust emissions during loading and unloading of construction material</p>	<p>Observations –controlled dust emissions and the spraying of water</p> <p>Check whether the construction material is stored properly to avoid dust emission</p>	<p>Head, College Divisional Engineer/TO</p> <p>Contractor</p>
	Transportation of construction materials may block the access roads and may lead to accessibility problems	<p>Construction materials and machinery should not be placed in a manner that blocks any roads, paths or local accesses</p> <p>Unloading of construction materials should be carried in a manner and time so as to avoid blockage of roads/paths/access</p> <p>Waste must not be placed on the roads</p>	Observation and field check	<p>Head, College Divisional Engineer/TO</p> <p>Contractor</p>
	Construction noise can disturb surroundings and the school environment	Conduct work during daytime and if possible during non-school hours. Adhere to noise levels stipulated	Noise at boundary should not exceed 55dB (A) or as specified under the	Head, College Divisional Engineer/TO

	<b>Environmental impacts</b>	<b>Mitigation measure(s)</b>	<b>Monitoring sources</b>	<b>Responsible party(ies)</b>
		under NEA and adopt mitigation measures that would be mentioned in the CEA recommendation letter on site based on the each project that will be undertaken	NEA	Contractor
	Injury due to lack of occupational safety measures and also health risks.	Workers should adopt necessary safety measures.  First aid provisions will be made available on site.	Check for existence of first aid measures in the premises.  Check whether the workers are using the safety gear that is provided.	Head, College Divisional Engineer/TO.  Contractor.
	Occupational safety issues:  Noise generated from cement pre-casting machines concrete, piling may pose an occupational health issue  Activities such as loading and unloading shuttering and metal poles and handling of heavy objects may result in accidental injury or crushing  In the absence of non-functional sanitary facilities, health issues may arise among the student population	Train maintenance and operation-staff to monitor and repair machines so that it will increase the efficiency of the machines while reduce the vibration and noise. Noise levels should be maintained within stipulated limits for the construction site  Train the workers on occupational risks involved in lifting heavy construction equipment and occupation risk and safety measures in the project site and environment. Train the workers on managing risks, emergencies anon first aid	All workers are inappropriate safety attire	Head, College Divisional Engineer/TO  Contractor
<b>b) Development of water infrastructure (expected to be minimal)</b>	Setting up of a storage facility will require water for worker consumption and potential cleaning of equipment	Well should be metered and the Water Resources Board consulted on appropriate extraction levels  Water in the well should be periodically monitored for quality and	Review water extraction rates and cross check with WRB recommendations  Dug wells should	Head, College Divisional Engineer/TO  Water Resources Board/ NWSDB

	<b>Environmental impacts</b>	<b>Mitigation measure(s)</b>	<b>Monitoring sources</b>	<b>Responsible party(ies)</b>
		<p>quantity</p> <p>To ensure minimal wastage of water, train maintenance and operation staff to monitor and repair leaks from cracked containment structures, broken pipes, faulty valves and similar structures</p> <p>A suitable sump and overhead tank should be constructed taking into account the daily requirement of water to ensure uninterrupted water supply</p>	<p>maintain at least 2m of water depth to maintain drinking water quality</p> <p>Periodic water quality testing (also indicated under construction)</p>	Contractor
	Unprotected wells can lead to safety and health issues	Dug well(s) within premises should have a protective wall as well as appropriate covering to prevent external material from entering the well	Well protected water sources in place and maintained	Head, College Divisional Engineer/TO Contractor
	Arsenic contamination in drinking water may case health related problems	<p>Analyze local surrounding arsenic test results and recommend for tube-wells or not</p> <p>Adopt rain water harvesting, ponds and filter, piped water supply</p> <p>After installation of tube-wells, presence of arsenic in the drinking will be tested and be used only if it satisfies the Sri Lanka standards</p>	Water Quality Test Reports.	Head, College Divisional Engineer/TO Contractor Water Resources Board. Medical Officer of Health/PHI
<b>5. OPERATION AND MANAGEMENT PHASE</b>				
<b>a) Solid waste management</b>	Lack of management of domestic waste water may cause health risks	Waste is disposed by the Local Authority	Construction waste disposed of weekly on	Head, College Divisional Engineer/TO

	<b>Environmental impacts</b>	<b>Mitigation measure(s)</b>	<b>Monitoring sources</b>	<b>Responsible party(ies)</b>
<b>Domestic solid waste disposal</b>	<p>and obscure the landscape</p> <p>Since solid waste collection will not be on a daily basis, there is risk of solid waste piling up on site</p> <p>These can lead to an increase in vector population and health risks</p>	<p>Adhere to CEA guidelines of waste disposal applicable to the cement pre-casting industry</p> <p>Ensure demarcated solid waste storage area with source separation for organic waste and other domestic non-organic waste. This storage facility should be able to accommodate solid waste up to 7 days</p> <p>Certain schools have adopted measures to decompose domestic solid waste by composting or by recycling. Under the environmental conservation activities taken up by schools "Environmental Brigades" have been formed to maintain a clean environment within the school premises. Productivity program sponsored by the National Productivity Centre promotes competitions based on 5S concept.</p> <p>However, there has not been a proper assessment on schools which maintain good quality physical environment</p>	<p>schedule and in arrangement with the Local Authority</p> <p>Cleanliness and good housekeeping practices on site</p> <p>Review solid waste management plan in place and in operation during site visits</p>	Contractor
<b>Domestic liquid waste disposal</b>	Lack of disposal of the domestic waste water will result in health issues to the worker	Ensure that the domestic wastewater is directed to soakage pits in conformance to local authority guidelines	Check the design plans for cesspits and soakage pits	Head, College PHI from the local authority.
<b>Hazardous waste disposal</b>	Lack of a disposal mechanism for chemical waste may lead to pollution	Disposal of chemical waste according to the stipulated guidelines under	Checking for adoption of existing disposal	Head, College

	<b>Environmental impacts</b>	<b>Mitigation measure(s)</b>	<b>Monitoring sources</b>	<b>Responsible party(ies)</b>
	<p>of surface water resources and land due to leachate</p> <p>Potential for increase health risk of students and teacher</p> <p>Lack of a disposal mechanism for computer and IT-based waste management</p>	<p>NEA on Hazardous waste regulation.</p> <p>Explore the private and public partnership on disposal mechanism on the hazardous waste for a nominal fee</p> <p>Identify a check list and standard mechanism for disposal of hazardous chemical waste</p> <p>Establish a central deposit for the collection of hazardous waste so that disposal will be easier</p>	<p>guidelines and plans</p>	
<b>b) A/L and O/L Science Laboratory</b>	<p>Lack of properly designed disposal mechanisms for chemical waste may lead to contamination of surface and ground water resources</p> <p>Lack of safety measures within the design will lead to fire and increase occupational safety hazards</p>	<p>Ensure regular maintenance on the gas tubes, taps to ensure the maintenance of the fume cupboards.</p> <p>Provision of safety measures in the design such as good ventilation and thermal circulation</p> <p>Take measure to install fire extinguishers</p> <p>Display the laboratory safety manual so that students and teachers can follow</p> <p>Provision of safety wear - face mask, goggles, noise isolating ear plugs</p>	<p>Checking for adoption of existing disposal guidelines and plans.</p>	
<b>c) Sanitary facilities</b>	<p>Discharge of untreated or insufficiently treated sewage, and due lack of maintenance of sanitary facilities may lead to:</p>	<p>Ensure proper maintenance of the sanitary facilities</p> <p>To ensure proper function and operation, train maintenance and</p>	<p>Observation and site reports to check the proper maintenance of pipes in sanitary facilities</p>	

	<b>Environmental impacts</b>	<b>Mitigation measure(s)</b>	<b>Monitoring sources</b>	<b>Responsible party(ies)</b>
	<p>Contamination of drinking water (ground and surface)</p> <p>Spreading of diseases among the student population and surrounding community.</p> <p>Degradation of aquatic ecosystems.</p>	<p>operation staff to monitor and repair leaks from cracked containment structures, broken pipes, faulty valves and similar structures.</p> <p>Provide a suitable sump and overhead tank, taking into account the daily requirement of water to ensure uninterrupted water supply for the sanitary facilities.</p> <p>A minimum distance of 15 m should be maintained between a tube-well and a latrine to prevent contamination of water resources. In case of shallow hand tube-wells, this distance should be 20 m as horizontal filters are used in this type of tube-wells.</p> <p>Provide separate toilets at adequate distance between boys and girls washrooms.</p> <p>Water supply is available in the toilets.</p> <p>One latrine should be designed for about 30 pupils (20 for girls and 40 for boys)</p>		
<b>d) Canteen</b>	<p>Lack of domestic waste management may lead to land and water contamination and increase vector borne diseases and obscure the aesthetic beauty of the school environment and give rise to odor</p>	<p>Adopt domestic waste management mitigation measures discussed above</p>	<p>Adopt domestic waste management monitoring measures discussed above</p>	<p>Head, College</p>



	<b>Environmental impacts</b>	<b>Mitigation measure(s)</b>	<b>Monitoring sources</b>	<b>Responsible party(ies)</b>
	Lack of training in canteen commodity handling can lead to wastage and hygiene issues	<p>Provide training in food handling to minimize wastage</p> <p>Ensure that food handlers maintain personal hygiene and inform the supervisor in case an employee is sick or has an injury</p> <p>Maintain good house-keeping practices as per the Food hygiene regulations</p>	Check for compliance and adoption of procedures as indicated under the National Regulation on Food (Hygiene) 2011 under the Food Act, No. 26 of 1980	Head, College PHI

CEA = Central Environment Authority, DPHE = Department of Public Health Engineering, ESMF = Environmental and Social Management Framework, NBRO = National Building Research Organization, NEA = National Environmental Act, NWSDB = National Water Supply & Drainage Board, PHI = Public Health Inspector, TO = Technical Officer, WRB = Water Resources Board.

Source: Asian Development Bank.